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CASE OF A WOMAN BITTEN BY A VIPER.

BY JOHN MOODIE, M.D.

CATHARINE BISHOP, aged about 70 years, living at Kelston, four miles and a half from Bath; in the month of April, 1801, whilst gathering violets on a sunny bank, was twice bitten on the back of her hand by a viper. The first time, not having observed the serpent, and thinking she had only been pricked by a brier, having sucked the blood from the wound, she went on picking violets as before. The viper immediately after sprang at her, and pierced the large vein between the middle fingers of the right hand with its poisonous fangs, secured its hold for some time, and it was with difficulty she shook it off, and killed it on the spot with her foot.

The pain was at first extremely acute, and in less than half an hour this person was seized with faintness, sickness at stomach, and vomiting. In this situation she was found by some neighbours, who carried her home, and gave what assistance they could. Towards the evening the wound became livid, the arm was much enlarged, and the skin had a yellowish hue. The infection soon after reached her throat, deglutition was greatly impeded, and she was very restless during the night.

The viper, which had been carried home, was broiled, and the part bitten anointed with its fat, but without giving the smallest relief to the patient. It would, indeed, be a desirable circumstance, if the same animal that produced the poison, should also afford an antidote to destroy its effects. Unfortunately, however, we have not hitherto had any clear proof of the truth of this popular opinion, upon which we can with certainty place our reliance.

The symptoms becoming more alarming, attended with inflammation and fever, the woman was visited about the close of the evening by a neighbouring apothecary, who thought

thought that little could be done, he therefore only ordered some olive oil to be given internally, and applied to the wound, with fomentations to the arm, and the body to be kept open; but still the patient received no benefit.

On the morning of the second day, the swelling encompassed her whole breast, and even extended to the bottom of the true ribs, respiration was extremely difficult, the pulse low, quick, and interrupted.

The third day, she appeared in great danger, the swelling having extended over the lower part of the abdomen, and her body was considerably increased beyond its natural size; breathing short and laborious, and her speech was inarticulate.

In this situation the apothecary again saw the patient, but recommended nothing farther, as he supposed that no chance of her recovery remained; the miserable sufferer had not slept for forty-eight hours.

I was now consulted by a relation of this woman, whom I informed that there was no doubt of recovery, if she could swallow the medicine intended to be administered to her; and the person having promised to attend punctually to my directions, I ordered two ounces of *aqua kali puri, olim lixivium saponarium,* a tea spoon full to be taken immediately, in about two ounces of water, or any other convenient vehicle, and repeated every three or four hours, till the patient found relief, and afterwards at longer intervals. The *linimentum ammoniæ fortius* was also directed to be applied to the wound, and frequently to the external parts principally affected.

In less than an hour after the lixivium had been administered, the patient appeared much relieved, the swelling gradually decreased, respiration was less obstructed, and she was more composed. A tea spoonfull of the medicine was then repeated every six hours, and the happy result was, that in three or four days from the first taking the lixivium, she was perfectly restored to health, and a week after came to Bath to return thanks for my advice, and the same day returned to Kelston on foot. At that time she had no pain or uneasiness whatever remaining, except a slight degree of hardness round the edges of the wound. On examination of the part bitten, I could discover the marks of four fangs, two on each side; and from the distance they were asunder, I should have supposed it to have been a large viper.

While employed in the medical department with the king's forces in the East Indies, from 1781 to 1788, my professional

professional situation with the army gave me frequent opportunities of observing the symptoms peculiar to, as well as the various means at that time recommended by authors, and generally adopted, in order to afford relief to persons unfortunately bitten by venomous snakes.

The medical practitioners of the French, and other Eupean nations, who had settlements in India, were in the habit of giving arsenic; in the form in which that dangerous medicine had been long administered, and too often with fatal effects by the natives of the country. The volatile alkali has been much depended upon by some, as a specific against the poison of the viper. Many years ago it was brought into general practice by the recommendation of M. de Jussieu, and in several instances is known to have been sufficiently efficacious, by stimulating the fibres and preserving that irritability which the effects of the poison tend to destroy.

The surgeon-major to the French forces on the coast of Coromandel informed me, that he had not employed the volatile alkali, or the lunar caustic, in resisting the disorder occasioned by the poison of serpents; but that he had generally ordered from twelve to sixty drops of the *spiritus volatilis succinatus,* long known by the name of *eau de luce,* with considerable success internally, and applied to the wounds of persons bitten. That during the campaign of 1782, he had twelve patients attacked with the cramp, all of whom he cured by the *spiritus salis ammoniaci cum calce,* or caustic volatile alkali. When the disorder fell under his care, he gave ten or twelve drops of this medicine in half a glass of water; soon after which a perspiration broke out; this he kept up by a decoction of cinnamon or sage, of which he ordered the patient to drink plentifully, keeping him to a strict regimen. The next day the patient was generally easy, and frequently cured; if the first dose did not operate, he gave a second or third, in the same manner.

Spasmodic diseases endemial to hot countries, are not only prevalent at particular seasons, but are the most fatal disorders to which Europeans are subject after their arrival in India; and exceed all of the kind ever known in cold climates, in the suddenness of their attack, extreme violence, the painful symptoms which they produce, their duration, and finally, if not speedily relieved by medical assistance, by their fatal termination.

In the cure of this complaint from the authority above mentioned, I was induced to make trial of the volatile

 alkali,

alkali, and generally with success, but given in much larger doses than those recommended by the French surgeon. I have, however, always found the most beneficial effects from the warm bath, a liberal use of opium in a liquid form, joined with a strong and active cordial, in small quantities, and frequently repeated.

The volatile alkali, acting as a powerful stimulus, is often prescribed in diseases where the pulse is languid, and the patient in danger of sinking; it is also of great utility in promoting the secretions, especially by the skin. And it seems principally owing to this, and their stimulating quality, that those salts have acquired the reputation of being specific remedies against the bad effects of the bites of serpents, and other noxious animals.

In what manner the poison of the serpent occasions such dreadful symptoms, and sudden death upon animal bodies, is a circumstance which remains to this hour involved in obscurity and doubt. It is, however, an important fact, and known to ancient writers, (though contrary to the authority of Dr. Mead) "that the venom of serpents produced its effects in consequence of a wound, and thro' the medium of the blood."

It has also been a general opinion, that the bite of the viper, and other noxious serpents, will sometimes occasion jaundice. This effect, says Dr. Mead,* is owing to spasms obstructing the biliary ducts, in the same manner as colic pains produce this disorder. But, it may be doubted, whether colic pains ever produce jaundice of themselves, without the assistance of *calculi*, or other exciting causes obstructing the biliary passages. Dr. Simson† observes, from several experiments, that jaundice in this case arises from the operation of the poison acting immediately on the blood, and producing such a change in it, without causing any obstruction in the ducts, or any regurgitation of bile from the liver.

Fernelius‡ appears to have had the same notion of it, when, speaking of *Viperæ demorsum aut epotum venenum*, as causes which bring on jaundice, says, *Quorum vi sanguis totus pristinam amittet puritatem, et in citrinum ac biliosum humorem corrumpitur, qui omnia pervadens cutem inficit atque labefactat.*

The

* Treatise on Poisons.

† See his Essay on the Jaundice, Med. Essays and Obs. vol. 1, edit. 4.

‡ Patholog. lib. vi. cap. 8.

The Abbé Fontana* has clearly demonstrated, from a variety of experiments on different animals, that the venom of the viper is perfectly innocent when applied to the nerves only; that it produces in them no sensible change, and that they are incapable of conveying the poison to the animal. On the other hand, he has shewn, that it acts immediately on the blood, and that, through the medium of the circulation, it destroys the irritability of the muscular fibres, and thereby occasions death.

Upon this view of the subject, it would not indeed seem difficult to comprehend in what manner the peculiar quality of the venom acts, so as to cause sudden death. It has been confidently reported by Fontana, and other naturalists that no instance of the bite of a viper proving fatal in Europe, can be ascertained; a happy circumstance were this true. If in Europe, at certain seasons, the poison of the viper should happen to be immediately thrown into a large vein running on the surface of the body, and the animal be of a size, so as to introduce a sufficient quantity of venom, (as occurred in the case of the woman now described) it will be rapidly carried to the vital parts; and even in the human body, may render the use of the most powerful medicines ineffectual.

It is, however, pleasing to reflect, that, of the many serpents supposed to be venomous, few are really so; and even these do not, in every instance, inflict a fatal wound. And though death sometimes happens from the bites of the European viper, as well as the Indian serpents, yet, recovery from the wounds of those supposed to be most poisonous is not uncommon.

The distinction between poisonous and innocuous serpents was long ago described by Dr. Gray, in the Philosophical Transactions for 1789, vol. lxxix; where he says, that he had examined one hundred and fifty-four species of serpents, of which number twenty-six only appeared to be venomous.

The effects produced by the bite of a viper, or other noxious animals, are so alarming and fatal, that we cannot wonder to find they have excited the attention of the most eminent physicians in all ages, to investigate the cause, and find out a powerful remedy for so dreadful an evil. But it would be endless to enumerate the various medicines which from remote antiquity, have been successively

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* See Fontana, Traite sur le Venin de la Vipere.

imposed upon the credulity of mankind, as specifics against the poison of serpents.

Arsenic has been long used by the natives of India, as a principal ingredient in the celebrated Tanjore pill; the composition of which is, white arsenic, pepper, quicksilver, the roots of velli-navi, (a poisonous vegetable peculiar to the Malabar coast) the roots of the neri-visham, and the kernels of nervalam, both drastic purgatives. The quicksilver being rubbed down in a mortar, with the juice of wild cotton, till the globules entirely disappear, and the other ingredients carefully powdered, the whole is beaten up into a mass for pills with the above juice.

I cannot help looking upon arsenic as a dangerous remedy, even when administered with every caution possible; and although it may be well adapted to counteract the effects of the poison, yet, as it often produces dangerous symptoms, and if used with freedom might occasion death, I was therefore deterred from ordering it.

Although many years have elapsed since Fontana published his experiments, respecting the internal use of the *lunar caustic*, now called *argentum nitratum*; yet, notwithstanding the advantage said to have arisen from this preparation of silver in the *nitric acid*, it is surprising that it has not hitherto excited more general attention. The *argentum nitratum* may be taken two or three times in the day, in the quantity of half a grain dissolved in two ounces of distilled or rain water, (otherwise the caustic will be in part decomposed, which will be evident by the white cloud forming in the solution); its use may be continued for several days with the greatest safety. The effects it produces, are generally heat in the stomach and breast, and after a time, tenderness in the gums, with a disposition to bleed, but without that swelling and pain attending the use of the oxyds of mercury.

Fontana mixed the poison with the lunar caustic, which he applied to a wound, and found that the venom was rendered perfectly innocent, while the corroding power of the caustic was diminished. He wounded a variety of animals with poisonous teeth, scarified the wounds, and washed them with a solution of the same caustic in water; by which means the lives of the greater number of animals were saved, though he knew they were such as were most easily to be killed by the poison, and the death of others was retarded. He in like manner tried a weak solution of the same medicine internally with great success; hence he congratulates himself in seeing his labours at length

length rewarded by the discovery of a true specific remedy for the bite of the serpent.

From the above account, we should have imagined the lunar caustic to be capable of curing every case of this kind, in which it was administered; but I am sorry to say, that after repeated trials made in several cases, I did not find it deserved the praises bestowed upon it by Fontana; and many practitioners have assured me, that they have been greatly disappointed in their expectation of its powers. And there are instances of *rabies canina*, terminating fatally after the use of the lunar caustic, and salivation by mercury. Although the utility of the several methods have not yet been fully established, there is reason to hope, from the spirit of investigation which now prevails, that some solid advantage will at length be derived for the benefit of the public.

When persons are unfortunately bitten by animals whose venom is highly deleterious, it is the duty of the practitioner to stop the progress of the disorder as speedily as possible; and this can only be done by a medicine, the operation of which is quick and effective. In various cases which came under my own direction, five of whom were bitten by the *cobra de capello*, the *cerastes*, and other serpents known to be highly poisonous, four recovered by the use of the lixivium saponarium.

When called to the patient immediately after the accident, my first attention was to apply a ligature* between the part bitten and the heart, to prevent the poison from diffusing itself over the body by means of the returning venous blood. With respect to medicines, I gave the preference to the lixivium saponarium, or the caustic volatile alkali, either of which, if timely administered, has been found sufficient to obviate the dangerous tendency of the poison. Of the above medicines, I ordered sixty or seventy drops, to an adult, in about two ounces of water, which was repeated every three or four hours, till the patient was relieved.†

Whatever may be the nature of the poison of the ser-

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* Though the use of the ligature has been considered by Fontana of no utility; yet, in compliance with custom, if this practice can give the patient a chance of recovery, it ought not to be neglected.

† An experienced practitioner will observe that mercury, the nitric acid bath, and many of the most powerful articles of the Materia Medica, are still left untried; but whatever measures are used under such circumstances, they must be prompt and efficacious.

pent, or of the *modus operandi medicaminum,* we know that the two fixed alkaline salts unite readily with acids, and change them into a mild neutral. Hence, if by accident or otherwise, any of the strong mineral acids should fall on any part of the human body and begin to corrode and give pain, the immediate application of the *aqua kali,* or a solution of any of these alkaline salts, will destroy the causticity of the mineral acids and prevent them from doing farther mischief. Or if any person should accidentally swallow any of the mineral acids, or hydrargyrus muriatus, or any other corroding salt, which an alkali will decompose, a speedy exhibition of a solution of the alkaline salts, in proper doses, afford the most likely means of relief and of preventing fatal effects.

On the EPIDEMIC CATARRH *commonly termed* INFLUENZA.

BY JOHN MOODIE, M.D.

MUCH has already been written on this disorder; however, the following observations, although the result of my own reflections on the subject, are not therefore offered to the public in support of any particular theory; considering it a duty incumbent upon every medical practitioner to contribute to the utmost of his power to the stock of general information. Having recently seen several cases of well marked influenza in this city, some distinct, others more or less complicated with the prevailing complaints of the season; in order to ascertain how nearly the symptoms resembled those of the last year, I attentively observed the progress and termination of the disorder, especially when unaccompanied with other diseases, and found no material difference, nor was any other method of treatment necessary.

Through the medium of the public prints, the community at large were for some time much alarmed by an apprehension of this epidemic; and the unfavorable impression tending to remove confidence from the mind, occasioned a despondency, which, if any contagion really existed, must have been conducive to its more extensive dissemination. Hence, among the lower orders of society, the dread of infection operating to the disadvantage of the afflicted, the offices of the friend, and of the nurse, may have been with-held from an ill grounded fear of danger.

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On the public mind, the first impression is too often the strongest, and the most lasting. To do away that impression before it shall sink too deep, is the laudable intention of the following remarks, which, after what has been said by others on the subject, may be found in a great measure unnecessary. Yet they may tend to shew, that notwithstanding what has hitherto been asserted respecting the nature and cause of this disorder, nothing conclusive has been advanced by any writer in favour of contagion. The great questions are well known to consist in, whether the epidemic be contagious? and whether it be an imported disease?

The variety of opinions prevailing among speculative men, in what relates to the origin and cure of the late epidemic catarrh, commonly termed Influenza, as well as to what regards the origin and cure of the plague, and some other diseases, is a convincing proof of the fallibility of the human mind. The subject of physic is attended with so many difficulties, that we frequently depend upon conjecture rather than certain facts; and this will always be the case in every science where so little can be decided by demonstration and actual experiments, and where the rest depends upon the caprice of our reasoning faculties, which are often insensibly perverted by the early prejudices of education and other causes. Things thus seen through various mediums, must necessarily strike our senses very differently, though in their nature they are essentially the same.

Observations, therefore, founded upon experience are the surest guide to truth in every science; and when applied to the prevention and cure of diseases, are alone more likely to succeed than the most refined and plausible theories where these are disregarded and set aside.

In the profession of Physic, where the practitioners are considered as the guardians of health, the community at large have a claim upon their exertions; hence moral duty should stimulate them to offer every information that may tend to universal good. It is beneath the dignity of a physician to consider himself the object of his own attention; he should deal out his bounty with a liberal hand, and let his discoveries be diffusive.

It appears from the description of epidemic diseases transmitted to us by eminent physicians, that a disorder resembling that which we now term *influenza* prevailed at different periods in various parts of the world, from 1510 to the present time. And although the diseases which form

form the prevailing epidemic may not have formerly assumed the characteristic symptoms which they have lately done; yet this is probably owing to particular circumstances, arising chiefly from the temperature of the seasons when they prevailed. It is, however, remarkable, that during the last century, when the plague so frequently visited England, the influenza appeared only once, viz. in 1657; whereas it has prevailed among us no less than seven times in the space of nearly eighty years.

Sir John Pringle was of opinion, that the sensible qualities of the atmosphere had no effect in producing the epidemic disease prevalent in London, and almost the whole kingdom, in the autumn of 1775. He also thinks that such diseases do not depend upon any principles with which we are acquainted; but upon some others, to be investigated by the united enquiries of scientific men.

However, if I may be permitted, from my own observation, to form any reasonable conclusions, I cannot but attribute the proximate cause of the epidemic catarrh, which appeared in the latter end of 1792, to the uncommonly hot, moist, and heavy temperature of the atmosphere, during the summer of that year. For it is a fact well known, that the vicissitudes of heat and moisture are extremely injurious to the human frame, especially when they rapidly succeed each other. Hence the great unwholesomeness of sudden calms, or heavy rains, after long droughts; and of sudden thaw after severe frosts. It is thus that the constitution of the atmosphere, which cannot be doubted, considering its great influence on valetudinary habits, shews itself; by which the human body is more or less disposed to diseases in general at one time than another, but particularly colds, the small-pox, epidemic dysentery, and ulcerated sore throat; whence diseases of the putrid kind not only become more frequent, but also more fatal, and are known to prevail with greater violence, as the air changes from a healthy to a malignant state.

The great plague in London, in the year 1636, which lasted twelve years, was more or less fatal at different periods. In eight years, one with another, two thousand people died yearly, and never less than eight hundred in one year; which shews that contagion and its mortal effects, depended as much upon the atmosphere as the disease itself. This circumstance is still more clearly proved, by the great disproportion of deaths in different weeks; the number in one week increasing from one hundred and

eighteen

eighteen to nine hundred and twenty-seven in the next; and in another, decreasing from nine hundred and ninety-three to two hundred and fifty-eight; and from that number again increasing, the next week, to eight hundred and fifty-two.*

In what manner diseases are occasioned or influenced by the obvious qualities of the air, is difficult to determine; notwithstanding all that has been said on its gravity and lightness, effects of heat and cold, moisture and dryness, or the winds blowing from particular quarters at certain seasons, with different degrees of violence; seeing that very sudden changes of weather from one extreme to another, frequently happen without producing any diseases of a malignant or epidemic nature.

Dr. Mead remarks, that contagion is propagated by three causes, the air, diseased persons, and goods transported from infected places.

Ancient authors, who lived in countries more exposed to these calamities than our own, observed the constitution of the atmosphere, which preceded pestilential fevers, to be great heats, attended with much rain and southerly winds; and it is an opinion as old as *Hippocrates*, corroborated by almost every subsequent writer who has treated on the subject, that no other than a hot and moist temperature of the air brings on the plague; and that the duration of this constitution is the measure of the violence of the distemper.

Whatever the temperature of the seasons in this quarter of the globe might have been a century ago, it is evident that the climate of England, and perhaps of other parts of the world, has undergone a very considerable alteration during the last thirty years, and is now become more changeable, moist and cold, than before.

The epidemic diseases which have at former periods, and recently prevailed in this country, may therefore be referred to the Spring and Autumn, when the particular state of the air has been unusually hot and moist, and subject to sudden changes. Hence the effusion of a general existing cause, rendering diseases epidemical, though not infectious, from one person to another, yet existing where we may be said to be living in an atmosphere more or less impregnated with contagion, according to the locality of the situation.

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* Grant on the Bills of Mortality.

We have therefore every reason to suppose, that the prevailing complaints have arisen from the sudden changes of the weather which have lately taken place. From hence it would seem, that the infection must depend upon some powerful operating principle, by which means certain noxious effluvia are absorbed from the air into the system generally acting as a morbid cause.

But whether the disorder is, or is not contagious, is a fact which, perhaps, still remains to be ascertained, and sanctioned by the most respectable authority.—Nevertheless, it is certain that whole families in this city, as well as in various and remote parts of the country, have, on the same day, been indiscriminately seized with the complaint, where there had not been any previous communication with those already affected. Neither were the medical attendants, nor others, in any respect liable to infection. During the prevalence of the disease, I knew persons who came hither from different parts of the kingdom, with a view (as they said) to avoid the disorder, but actually brought it with them, which was not to my knowledge, communicated to others who resided in the same house.

Catarrhal affections, which may be properly termed well-marked influenza, as far as my practice and information extended, first made their appearance in this city and neighbourhood about the beginning of November, 1802, and did not entirely disappear until near the middle of June. About this time, I was desired to visit a child a year and a half old, who had hitherto enjoyed good health, but died of the catarrhus after a short illness, unaccompanied with any other species of the epidemic.

Bath, April 10, 1804.

[To be continued.]

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

I HAVE for some time intended to give you an account of the efficacy of arsenic, internally administered in chronic rheumatism; a disease which it has never before, to the best of my knowledge, been employed to relieve; and I have only been waiting for more experience, to justify my recommendation of it. Having in the course of last summer,

summer, unsuccessfully exhausted the common list of anti-rheumatic remedies (warm bath, various liniments, antimony, Dover's powder, bark, mercury, opium, guaiacum and ammonia, in several forms and combinations; mustard seed, horse-raddish, &c. &c.) in the case of a friend of mine, who was every day becoming a greater martyr to that tormenting complaint, some analogies and reasonings, which will probably appear very loose to many of your readers, and particularly to those who do not know how casually medical discoveries are often brought to light, led me to the use of this medicine: I will slightly advert to them before I proceed.

1. Most of the common anti-rheumatic remedies; for instance, warm bathing, antimony, guaiacum, mercury, bardana, are employed in cutaneous diseases: arsenic too, is sometimes so employed.

2. Arsenic cures certain intermitting paroxysms and pains, as ague, and head-ache: the pains of rheumatism have their periodical aggravations.

3. Arsenic is a powerful tonic, and chronic rheumatism is a disease of debility.

The sufferings of my patient, a young man of twenty-six, were altogether confined to his chest and loins for several months; he was during this time nearly free from pain in the day, but the nightly paroxysms kept increasing in violence. His limbs at length became generally affected, and one of his knuckles much enlarged; he was now never easy upon motion, and at last got almost unable to leave his room. His appetite and strength were much impaired, and having before tried such a variety of remedies, he despaired of his situation, and began to set himself down as a cripple for life. He had, moreover, been troubled for some years with a pretty general eruption of the herpetic kind, which first appeared after a course of mercury, and which at times was very virulent. Under these circumstances it was, that I recommended to him the use of Fowler's mineral solution: he began, as is usual, by taking four drops in water, three times a day, which he gradually increased to three, and finally to four times the number; a quantity which few persons can bear, ten or twelve drops being commonly sufficient. In two or three weeks, without the aid of any other remedy, he was considerably relieved, and by a perseverance of two months in the course, was, and still remains, perfectly cured, both of rheumatism and herpes. He began with the solution in October, and consequently recovered under all the

disadvantages

disadvantages of wet, cold, and changeable weather. As he was completely tired of nauseous medicines before, the tastelessness of this was a great recommendation with him, as it must be with others, and contributed very much to his steadiness in its use. I have since had the satisfaction of relieving other rheumatic patients by the same means, after the failure of the usual remedies; and Mr. Hardman (the gentleman who lately gave you an account of his success with the cupping glass, in a case of abscess) informs me, that a lady under his care has lately been relieved from the most violent pains of the kind, which had set the best of the old remedies at defiance for thirteen or fourteen months, by the use of the mineral solution alone. The disease began, in this case, to yield to it in three or four days; she still continues the medicine, and has lately walked three or four miles at a time, after having been unable to move about her own house with comfort for several months. In this case too, as in the others, enlargements of the joints have subsided, and I have no doubt from what I have seen, that this remedy, employed with proper discrimination and care, will be found worthy to supersede many others, and to afford more relief than has commonly been afforded in the worst cases of chronic rheumatism. I must be allowed to make two or three remarks before I conclude.

It will be thought by some, that the cutaneous disease led me to the use of the arsenic in the first case. I should not deem such a remark of any great consequence, if it were urged; but I will just assure you that it never occured to me, in the first instance, to direct my attention to the removal of an eruption, which length of time had rendered familiar, and to the disappearance of which every subsequent illness might have been ascribed, as is occasionally done; and that this circumstance added but little to my previous determination to employ that solution on account of the rheumatism, though its double effect has certainly much increased the pleasure of the cure. Lest the union of two complaints in this case may lead to some suspicion of the pain differing in any respect from rheumatic pain in general, it may be worth while to observe, that in the other cases there was nothing of the kind.

Cases of chronic rheumatism, in which the usual remedies have failed, and in which the arsenic may be improper, will no doubt occur; but with your readers, I conceive particular references are quite unnecessary: most gentlemen

gentlemen of the profession are fully competent to form their own judgments. For the same reason, it may be superfluous to hint, that a few drops of laudanum will be occasionally required, to make the solution sit easy with delicate persons, and that a gentle laxative, in case of costiveness during its use, should not be forgotten. Henceforth, perhaps, it may be right to give the solution a trial, for reasons obvious to your readers, in some tedious arthritic cases; and likewise in the wandering pains and anomalous ailments of those syphilitic patients, who have sustained permanent injury both from the disease and its cure. It would be easy to extend the prospect still farther, but let us first cultivate the ground we have gained.

A professional gentleman, to whom I mentioned part of the facts here detailed, gave it as his opinion, that the arsenic owed its success in rheumatism *entirely* to its tonic powers. Undoubtedly it would not have so succeeded, if its powers had been of an opposite kind; but it is not the property of tonics in general, *directly* to relieve rheumatic pains, and reduce rheumatic enlargements; nor can we attribute to its tonic powers its alleged anodyne properties in some cancerous cases. Besides, the pain in all the patients alluded to in this letter, has yielded to it before the strength was perceptibly, or could be materially improved, insomuch, that the strength may as well be called the consequence of the ease as the reverse. That arsenic has a local, in addition to a general effect, is evident from the itching and partial discolorations so often attendant upon its use; and it is certainly to its peculiar action upon the superficial circulation, that we must ascribe much of its efficacy in cutaneous complaints, if not its other qualities However, I am by no means inclined to be uneasy about its modus operandi, I am only anxious about the matter of fact; and I hope, on that account, that your Correspondents will turn their attention to the subject without delay: I have much deceived myself, if it be not very well worth their while.

I wish most sincerely I may soon have more success to communicate: in the mean time, I shall be particularly obliged to any gentleman who publishes an account of impartial trials made with this medicine, be the event what it may.

I am, &c.

JOHN JENKINSON.

Manchester, May 21, 1804.

To

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE propriety of the practice of bringing on premature labour at the seventh month, in such cases of distortion of the pelvis, as had, or might require the use of the crotchet, is now so well established, that perhaps an apology may be deemed necessary for again obtruding the subject on your reader's attention; but as the matter is in itself important, and the case I have to offer is conclusive, I shall close my communications regarding it, with the following narrative.

Mrs. M. about twenty-eight years of age, had been twice delivered by the crotchet, at the full time, by a gentleman much employed in midwifery practice, owing to a contraction of the pelvis, which hindered the birth of a full grown fœtus. In her third pregnancy she applied to me, from hearing of my success in similar instances, by bringing on premature delivery. I advised her to submit herself to my directions, and to let me know about the end of the seventh month, She obeyed my injunctions, and I used the proper means for hastening delivery, ordering her at the same time an anodyne mixture to take occasionally, and in which she believed the efficacy of my method to consist. On the fifth day from the rupturing of the membranes the child was born alive, and is now nearly three weeks old, improving daily in strength. The labour was lingering for about forty hours, but not at all strong till within a quarter of an hour before the birth, otherwise nothing remarkable occurred, and she thought herself better the day after than she had formerly done at the end of a week.

Here the child's life was certainly preserved, as well as the sufferings of the mother reduced to nothing comparatively, not to mention her entire safety, an object that may very justly claim the first consideration in every case.

I am, &c.

E. HARDMAN.

Manchester, May 3, 1804.

To

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

A Method of combining antimony and muriatic acid, by a double exchange in the dry way, by distilling a mixture of sulphurated antimony and corrosive sublimate, has been long known in chemistry, and the salt, resulting from this combination, has been named butter of antimony. Who was the author of this capital discovery, it is unknown to me, or, otherwise, I would do him the honour to acknowledge it; as it would shew him, whoever he was, to have been a chemist, at least, not inferior to some of those of modern times. There are, however, slight grounds to believe that it was known before the age in which Van Helmont lived. This author affirms that the alcahest of Paracelsus rendered metals distillable by the retort, and restored them again without alteration of their specific gravities; and, whether this may have any allusion to the distillation of butter of antimony, I leave it to the adepts to determine. The distillation of this butter of antimony is not attended with any visible discharge of noxious fumes, and may be conducted in the middle of a laboratory, in unluted vessels, without being offensive to the spectators, and with safety to the operator, if he only take care to tie a piece of cloth, or paper, round the upper part and neck of the retort, to retain the heat, and prevent the butter from congealing, and blocking up the nose of the retort, and exploding the vessels, till it drop down into the receiver. The butter, as it is called, when allowed to remain in an open vessel, exposed to a moist air, between three and five months, deliquesces into a clear liquid like water. In like manner, if the icy butter of antimony be distilled from a clean glass retort into a dry receiver, three times over, it becomes the liquid oil of antimony of the chemists. If the liquid oil, prepared in either of these ways, be dropt into water, a milkiness is immediately produced, and a white powder precipitates to the bottom of the vessel, which was called by the chemists, the angelic powder, the powder of algeroth, the mercury of life, &c. Within the last thirty years, Mr. Scheele, a German chemist, residing in Sweden, found that this powder dissolved readily in a solution of cream of tartar, at a boiling heat, and on evaporation furnished an excellent salt of antimony, greatly superior to the common tartar emetic which

had heretofore been in use among the chemists, and was always adulterated with heterogeneous salts. In order to save the great quantity of corrosive sublimate employed in preparing this powder, Mr. Scheele was induced to make trials, and actually did discover a method of preparing butter of antimony, *viâ humidâ*, without assistance of corrosive sublimate. As his process is conducted in an open digesting vessel, and gives out little fumes, it is perfectly safe to the operator, and as I have frequently tried it, and have always obtained more pulvis algerothi than half the weight of the antimony employed, I subscribe to the truth of it, always willing to give praise to whom praise is due.

Of late years, however, the Colleges of Physicians of Edinburgh, London, and Dublin, pretending, I suppose, to improve on Mr. Scheele's process, have published, in their Pharmacopœias, a process for muriat of antimony, which did not succeed with me; nor do I believe that ever it has succeeded, or ever will succeed, with any man, in its present form, for reasons to be presently mentioned. I have not learnt with certainty, whence this process originated. Certain, however, it is, that it has had a place for ten years in the Pharmacopœia of the Edinburgh College; and has, last year, been copied into the last edition of their Pharmacopœia; which circumstance renders it probable, that they have not seen their error during that time, and also that they have had no communication with the practical chemist; for, I doubt not, that many chemists, in this island, could have told them of their error, if they had been willing to hear it. From a circumstance which fell under my observation, I question whether they would listen to any representation on the subject, much less thank any one for his communication. Till I saw it again honoured with a place in the Edinburgh Pharmacopœia, and Dispensatory, I surely thought their process was long ago exploded; and I think I may safely advance, that if the Colleges had been under necessity of preparing the powder of algeroth for the use of their patients, or in the way of the practical chemist, it never could have had a place in any Pharmacopœia. The Editor of the Edinburgh Dispensatory, in 1794, has given this mode of preparing muriat of antimony a preference to every other mode of preparing it, although he has been guarded enough not to point out wherein its superior excellency consists; but the Editor of the same work in 1803, has written of it with more reserve.

Having

Having thus observed, that the error was become general, and might be a means of misleading the young chemist, and of damping his juvenile ardour, at the loss of his vessels and materials, and might in this way tend to retard the progress of chemistry, I thought it proper to communicate the result of my experiments to the public, though perhaps, I may be little attended to in a question between me and three Collegiate bodies of Philosophers.

The oxyd of antimony with sulphur, by nitrat of potash, as the Edinburgh College is pleased to call it, which is a preliminary step to the distillation of muriat of antimony, is prepared by deflagrating in a red hot crucible, equal weights of sulphurated antimony and of nitrat of potash, thoroughly mixed and dried. The oxyd thus obtained is to be pounded and washed repeatedly with boiling water, and dried. A pound of sulphuric acid, which is not seven ounce measures, is next to be put into a retort, and afterwards there is to be added, by degrees, one pound of the above oxyd of antimony, previously mixed with two pounds of the dried muriat of soda. This mixture is to be distilled in a sand bath, the distilled matter is to be exposed to the air for several days to relent or deliquesce into a liquid, and the fluid part poured off from the dregs. Now, let facts speak for themselves. I proceed to the experiments.

Feb. 20, 1797, Having prepared oxyd of antimony, with equal weights of nitrat of potash and of antimony, I washed it with boiling water repeatedly, then dried it, and found that two pounds and a half, from the crucible, lost one pound by this treatment. The oxyd was now of a dark red or brown liver colour. Twenty-four ounces of it, mixed with an equal weight of dried muriat of soda, were put into a large retort. Nearly sixteen ounces of sulphuric acid were next poured upon this mixture, and the retort set into a sand-bath. No sooner did the sulphuric acid touch this mixture, than the muriatic acid began to pass away copiously, in white suffocating incondensible vapours, and with a smell of sulphurated hydrogen gas (a liver of sulphur smell.) A capacious receiver was applied, with a hole in the side for applying a syphon, at which, during the distillation, the muriatic acid carrying some little oxyd of antimony along with it, passed away in a continued stream, and contaminated the laboratory so much, that no person could stay in it, notwithstanding a draught of air through it. The phenomena were such that I durst not lute the vessels completely for fear of explo-

 sion;

sion; and indeed this seemed the less necessary, since in the old process for muriat of antimony by muriat of quicksilver, no luting is required. This was one of the most intolerably suffocating operations I ever performed. After the mixture distilled to dryness, on lifting out the retort, I observed that the sulphuric acid, for want of fluidity, as we may say, had not penetrated the half of the mass, and much of the oxyd lay unchanged, but compacted into a firm lump which could not be dissolved, or be got out without breaking the retort. A thin crust was collected about the neck of the retort, of a deep yellow colour, which did not liquefy by heat, like muriat of antimony, nor could it be got off, in any other way, to be of use. It extended downwards to nearly the surface of the residue. After all, the quantity of muriat of antimony, if such it might be called, obtained in the receiver, both in a fluid form, and sticking to the sides of it, in form of a yellow crust, not liquefiable by heat, was a mere trifle. After precipitating it with water and washing it thoroughly, I obtained twelve drachms and thirty-six grains of powder of algeroth, out of twenty-four ounces of red oxyd of antimony, which I began with; which is little more than one ounce out of sixteen ounces, and not an eighth part of what could have been got by Mr. Scheele's process. But it is to be observed, that the yellowish crust on the receiver, could not be completely washed off, but still left a yellow stain. The mass was afterwards pounded and treated with muriat of soda and sulphuric acid, via humida, and this repeated, by which I obtained more muriat of antimony; but still a great quantity of black matter remained, which was sulphurated antimony unchanged. It seemed to be about a pound, but I did not weigh it, and was further insoluble in muriatic acid. The first observation that naturally occurs to one on perusing the account of my experiment, is, that I have inverted the order of proceeding, recommended by the Colleges, in adding the sulphuric acid to the dry materials; whereas, they order the dry materials to be added, by degrees, to the sulphuric acid. To this I answer, the method of proceeding, ordered by the Colleges, is evidently copied from Mr. Scheele's process, where the operation is conducted in an open digesting vessel; the diluted sulphuric acid is first allowed to dissolve the sulphat of potash, and combine with the oxyd, and afterwards quits it, when the muriat of soda is presented, in consequence of a double exchange; the sulphuric acid combining with the soda, and the

the muriatic acid with the oxyd of antimony. But here, as the process is done in a retort, the dry materials cannot be added, by degrees, to the sulphuric acid, without some of them sticking to the neck of the retort, (unless done in a tubulary one) and besides, after the addition, the fumes issue out so copiously that the operator is obliged to look to his own personal safety; to add the whole as quick as possible, and run. In the second place, I used only an equal quantity of muriat of soda and of oxyd of antimony, although the Colleges order a double quantity of the former; but this I had previously found, from trials in Mr. Scheele's way, to be sufficient to dissolve the whole of the oxyd in an equal weight of crocus of antimony. Thirdly, I used rather a larger proportion of sulphuric acid, in order if possible to save my retort, but in vain. And here I think it worthy remark, that the Colleges certainly had not foreseen that twelve ounces of sulphuric acid, which are not equal to seven ounce measures, were not sufficient to wet even the half of one pound of oxyd of antimony and two pounds of dried muriat of soda, and, therefore, that it was impossible that the necessary combinations could take place, even if the materials had been in a proper state for it. The fourth observation I shall make on this process, is, that the muriat of antimony is supposed to be in a solid form, like butter of antimony of the chemists, since it is to be exposed to the air for several days to attract humidity, and dissolve into a liquid; and, even this circumstance shews that the Colleges have never tried their process, for in my experiment the small quantity of muriat of antimony obtained, was in a fluid form, and that only in consequence of the small quantity of water in the sulphuric acid. Finally, the Colleges have not made any provision for the condensation of the loathsome suffocating vapours, nor for saving the retort; and this last consideration, even if muriat of antimony could be obtained by it, would give Mr. Scheele's process a decided preference with the practical chemist.

As a mistaken theory has led to this process, I shall point out, as nearly as I can, to what causes the want of success is to be attributed. It seems to me to depend chiefly on two circumstances. First, the antimony is not oxydised sufficiently, as clearly appears from the experiments above, where, after all that muriatic acid could dissolve, a great quantity of antimony was brought into view, seemingly unchanged; but this was pointedly enough taken notice of by that excellent chemist, Mr. Scheele.—

The

The oxydation of antimony, too, has its bounds; for, if it be oxydised white, not a particle of it will dissolve in muriatic acid, as I found at the expence of a considerable quantity of materials.

The second circumstance, to which the want of success is to be attributed, is the form of applying the muriatic acid; a proper quantity of fluid not being present as a medium through which the ingredients may act on one another. An opinion has been entertained by many chemists, since the time of Boerhaave, (see Boerhaave's Elements of Chemistry, sect. ix. on neutral salts considered as menstruums) that muriatic acid, in a concentrated form, was capable of dissolving metallic bodies, on which it could produce no effect in a watery state. This inference they have drawn from a few experiments, in the way of cementation and sublimation, conducted with sulphat of iron and muriat of soda. All my experiments, however, concur to shew, that muriatic acid, whether concentrated or diluted, acts but weakly upon metallic bodies, in general, so long as it remains common muriatic acid, and produces no sensible effect whatever either upon antimony or quicksilver; but no sooner does it meet with manganese, or red oxyd of iron, (vulgo colcothar) than it becomes oxygenated, and presently oxydizes and dissolves metals, on which it exerted no power before; and, it appears to me, that its action, under this modification, can be extended much farther in a watery than in a dry concentrated form, merely by protracting the digestion; whereas, in the dry way, it has not time to act to the same advantage, being forced off with strong heat. And oxyd of iron being present in all the operations done with sulphat of iron, explains the effects, falsely attributed to the concentrated muriatic acid. But, even if concentrated muriatic acid were required in this process, it could not be applied to advantage to any metal, by pouring sulphuric acid upon dry muriat of soda.

In the experiments alluded to above, with the sulphatic salts, the muriatic acid is disengaged in a slow progressive manner, in the way of exchanges; but no sooner is sulphuric acid poured upon dry muriat of soda, than the muriatic acid is forced off instantly, in white vapours, and passes away without shewing the least disposition to condense. Even, if a quantity of dry muriat of soda be put into the bottom of a tall vessel, a high column of water poured gently over it, and the sulphuric acid poured thro' the water upon the salt, a considerable portion of the mu-

riatic

riatic acid, instantly expelled with noise, will rise up thro' the water, and fly off, before the operator can agitate the mixture. Accordingly, all expert chemists have found it expedient to dilute the sulphuric acid, in distilling muriatic acid from muriat of soda; and when matters are thus managed, the work goes on quietly, and the vessels may be luted from the beginning. Indeed, Glauber, to whose industry we are indebted for this method of distilling muriatic acid, and, after him, Boerhaave, sometimes used sulphuric acid without dilution; but, in this case, they kept their vessels open till the volatile acid made its escape, and, when they used bole or brick-dust, in place of sulphuric acid, they previously expelled the wild crackling spirit, as they called it, by decrepitation; by which unœconomical mode of proceeding they always lost a great deal of the muriatic acid.

I have thus, I trust impartially, delivered an opinion, grounded on experiments, concerning the process of three Colleges of Physicians for preparing muriat of antimony, and I wish it to be understood, that in what I have advanced, I may be considered as having addressed myself chiefly to the practical chemist. To those who form their opinions, in these matters, according to the degree of credit they place in this or the other writer, or body of men, I would say little, as it would avail little, till they have learnt something of the practice of chemistry. With the former, my arguments will have due weight, as in every trial of this kind his vessels and materials are at stake; and, if he entertains any doubts of my veracity, he has only to light up his furnace, and repeat the experiment; a single instance will convince him of what I have advanced.

I shall now subjoin an account of Mr. Scheele's process, and of the method of properly preparing tartrit of antimony by it.

Take of antimony one pound, of nitrat of potash one pound and a half; mix and dry them, and deflagrate in a crucible or iron mortar. Pound the oxyd thus obtained, and put one pound of it into a glass matrass or digester, and pour upon it fifteen ounces of sulphuric acid, diluted in three pounds of water, and afterwards add fifteen oz. of muriat of soda. Digest, Mr. Scheele says twelve hours, but I have found two or three hours, in general, sufficient, and during that time the mixture must be frequently stirred, and the heat kept moderate, for the muriat of antimony will begin to evaporate before it boils. The muriat

of antimony, when completely formed, which is known by the milkiness of the solution, is to be strained through linen, and diluted with boiling water, that the pulvis algerothi may precipitate, which is to be repeatedly washed and dried. The pulvis algerothi, thus prepared, still retains a portion of muriatic acid, which cannot be separated from it by ablutions; for, after having washed it upwards of twenty times, in fresh portions of distilled water, I observed that the last had as much of the rough, harsh taste of muriatic acid as the first. But I have never been anxious about separating the muriatic acid entirely, in the suspicion that I might thus alter the state of the oxyd; a circumstance that ought to be carefully guarded against, a slight degree on either side rendering it insoluble in muriatic acid or in acid of tartar. Besides, since I followed Mr. Scheele's method, I have been of opinion that an under proportion of muriatic acid was essential to the constitution of good tartrit of antimony.

With oxyd of antimony, prepared by heat, or by nitrat of potash, I never could obtain tartrit of antimony in transparent crystals; they were always opaque, and stained orange, yellow, or green; a sure mark of an incomplete combination; whereas tartrit of antimony, from pulvis algerothi, precipitated by water, concretes into transparent crystals, which become rather white, or effloresce a little in the open air. In preparing tartrit of antimony, I put nine ounces of acidulous tartrit of potash into a matrass with twelve pounds of water, and when the solution boils, add, by degrees, about six ounces, or six ounces and a half, of pulvis algerothi. During each addition, I have observed a kind of effervescence excited. The quantity of water here ordered, is not sufficient to dissolve, with boiling heat, the acidulous tartrit of potash; but as the tartrit of antimony forms, which is a very soluble salt, the whole comes to dissolve gradually, and thus a considerable time is saved in the evaporation. I am convinced that even less water would suffice, for the reason now mentioned. When the whole is added, the solution is allowed to boil about two hours, perhaps less time would suffice, but as the pulvis algerothi is generally mixed with a grain or two of sulphur of antimony, which passes the filtre, one cannot see when the solution is complete. On this account, the vessel should be allowed to stand in the surface of the sand till the powder subsides, when the acid of tartar will be found to be completely saturated, and a little pulvis algerothi at bottom, mixed with the sulphur of

of antimony now mentioned. It is this dark-coloured powder which yields a smell of sulphurated hydrogen gas (liver of sulphur smell) on boiling, for after the solution is passed through a filtre of paper, and again evaporated, the smell is no more observable.

After the solution is boiled down considerably, I pour it into a bason, and again evaporate with a heat gradually decreasing through the night, and next morning I have generally the satisfaction to observe, after breaking the pellicle, fine crystals of tartrit of antimony on the bottom of the bason. The solution must be decanted off into another bason, for further evaporation. The crystals, when allowed to dry in a gentle heat, and examined, I have found to be pyramids, with four flat sides and four right angles, joined together by their bases, and thus the pyramid of one end forming a parallelopipedon with the pyramid on the other end. A very thin square table or plate intervenes between the bases of the two pyramids. Some of the pyramids I have observed to have two of their opposite sides broader than the other two opposite sides, thus exhibiting the appearance of a wedge. The tartrit of antimony thus prepared, though tasteless, still shews signs of muriatic acid, joined to oxyd of antimony, for on scraping the crystals from the bason with a clean polished knife, I found it affected in the same way as from calomel; the muriatic acid readily preferring iron to antimony or quicksilver. Hence, it is a kind of quadruple salt, consisting of oxyd of antimony with muriatic acid, rendered soluble by acid of tartar, combined with an under proportion of potash. And here I think it worthy remark, that I have not found a name, in the new Nomenclature, expressive of its constituent parts.

[To be continued.]

ROBERT STOTT,
Surgeon.

Dumfries, April 3, 1804.

To the Editors of the Medical and Physical Journal.

Gentlemen,

THE pamphlet of "William Goldson, Member of the Royal College of Surgeons in London," having this evening fallen into my hands, I offer you some Remarks on it;

it; to which, if you think them worthy of insertion, I may hereafter make some additions.

The first thing I am struck with is the boldness of the author. His title is, "Cases of Small-pox subsequent to Vaccination." There is at this time a Committee appointed by the Royal Jennerian Society (including a Woodville and a Ring, than which names it would be difficult to find greater authorities in the history of Variola and Vacciola) to investigate *a case* which the author would doubtless not hesitate to rank with those of his pamphlet. Being on this Committee, I have had the opportunity of observing with what becoming modesty and caution men of the greatest experience and character offer their opinions, and I cannot but think that the title of the pamphlet under my eye, would have been only correct if it had been expressed, after *supposed* cases of Vaccination. The practitioner who inoculated in *the case* yet *sub investigatione*, informed me that as he had not taken minutes of it at the time, and did not now remember it, he supposed it had been a spurious case; and I persuade myself that *the different cases* of W. G. must all have been spurious cases. But, let me turn to the pamphlet.

Page 9. "If we (they of Portsmouth, Portsea, and Gosport) were not so early in adopting it (Vaccination) as in places less remote from London, we have embraced one very material advantage by our forbearance—we have experienced a much smaller number of failures. In no instance, have I myself seen any approach to a spurious disease; and very few indeed, to my knowledge, have occurred, &c."

"But the occurrence of small-pox in Clark, one of the marines first of all inoculated at the Infirmary by Mr. Rickman, seemed to give some check to the practice, &c."

Page 8. "With matter taken from this source (the Infirmary) I inoculated four children. And in a very short space of time it was pretty generally adopted in the neighbourhood." How could any but spurious cases be expected from the source which failed to yield protection to the marine?

Page 16. The author says of one case, "Several medical gentlemen saw the child with me, who were decidedly of opinion as to the nature of the eruptions.—That they were variolous." When a man goes to oppose his own to a general opinion, he ought to be very clear in the establishment of every statement. Why does not he give the names of his medical gentlemen? It ought not

to

to have been a fortnight or more after his inoculation with variolous matter before the medical gentlemen visited the child. From his own description of the case, they must have possessed very superior powers of discrimination to have been able to distinguish the nature of the remaining eruptions, covered with a warty scurf or encrustation, four days before their seeing them. I think his case of small-pox must have been altogether spurious. But, *passons* to the cases of the author's own vaccination.

Page 25. "The pustule was perfectly satisfactory, &c." To whom? Here we have not even the concurrence of anonymous medical men to substantiate the author's conclusion. On this subject, above three years afterwards, "seven distinct eruptions appeared on the face, neck, and arms. These were so characteristic of the small-pox, that neither Mr. Hill, Mr. Seeds, or Mr. Weymouth, three respectable practitioners in Portsea, who saw the child with me, hesitated to pronounce them the effect of variolous contagion."

Had these gentlemen seen the child under its supposed vaccination, they would probably have had to declare, *it must be re-inoculated, it is not yet protected.* In this way I have myself had to damp the joy of surgeons up the Mediterranean both Spanish and Italian. They have shewn me finely inflamed looking arms; but I had been already too much harrassed with spurious cases to hesitate for a moment in pronouncing the effects altogether spurious.

Page 29. "The progress of the arm was extremely regular, &c." "Matter was taken from the pustule early on the ninth day, which I used on a child who had the disease nearly in the same manner, &c." "Mr. Merritt, of Portsmouth likewise vaccinated a child with matter from the same source." Did he see the pock from which it was taken? If so, he must have had an eye as little experienced in detecting spurious pustule as W. G. or the surgeons up the Mediterranean. The author has clearly shewn that the child had the small-pox three years afterwards.

These are not all the cases of small-pox which have occurred after supposed cases of Vaccination, *in the place where they have less than in others experienced failures*; but I have not at present leisure to go further into the subject.

Salisbury Square, 28, iv. 1804. JOHN WALKER.

P.S. 5, v. 1804. An application has just been made at the Central House of the Royal Jennerian Society for vaccine matter from "Dr. Waller, of Portsmouth," with the remark, that 'that which they have there cannot be depended

pended on; and on that account he sends to the Society, where he reckons upon being furnished with the genuine. Thus we find that, happily, all the medical men in that neighbourhood have not, in suspicious cases, the full confidence of W. G. Let us hope then that spurious pustule will there disappear, and that the inhabitants will hereafter have only to do with the certain protection.

11, v. 1804. I have just been called upon for another packet of vaccine matter for "Mr. Shute, of Gosport," and have sent a rich supply, which may produce more *heartfelt* conviction in those parts than long arguments.

OBSERVATIONS ON THE SEVERE DYSENTERY, *as it existed on board the Lord Duncan East Indiaman during a Voyage to Bengal, in* 1802—4. *In a Letter to* JOHN HUNTER, M. D. F. R. S. *Physician to the Hon. East India Company. By* JAMES ATKINSON.

Dear Sir,

NOTWITHSTANDING the multiplied labours of medical men for the elucidation of difficult and obscure points in the profession, and acknowledging with due admiration the vast improvements of late years, there is much left behind to exercise the sagacity, the talents, and discrimination of succeeding practitioners. They have not yet acquired that quickness of perception, and soundness of judgment, which must enable them fully to comprehend the phenomena of disease. They have, however, been indefatigable in their inquiries; and such exertions as tend to alleviate the anguish of disease, and to lessen the weight of human misery, must ever be regarded as noble and exemplary: for those feelings are surely the most honorable, which excite a man, independently of his professional obligations, to devote his time and abilities to the common interest; and the more dangerous or fatal the maladies are which we have to encounter, the more it requires of steady and unremitting zeal in the prosecution of our studies.

From the incommodious situation of the sick on board a ship, and their want of proper attendance, the medical practitioner labours under numberless disadvantages. Often his intentions are rendered useless by their neglecting the regulations prescribed; every auxillary means is probably disregarded; and those who do recover from any malignant disorder, are generally indebted to the effects of

of medicine alone! On entering the sick-birth, where a number of patients labour under a complication of diseases, the mind, filled with a serious emotion, must frequently advert to that awful scene, so well described by our immortal poet, where he emphatically enumerates the miseries which harrass mankind.

——— Pining atrophy,
Dropsies, and asthmas, and joint racking rheums;
Dire was the tossing, deep the groans; Despair
Tended the sick, busiest from couch to couch;
And over them, triumphant Death, his dart
Shook,—but delayed to strike!

The ingenious and profound publications of Hunter, Pringle, and Lind, may be supposed to have rendered any further remarks on the Dysentery superfluous, and obtrusive; but as long as diseases resist the operation of medicine, there can be no end to investigation. The object of these pages is to describe a practice in the treatment of this formidable and distressing disease, which I have found peculiarly successful. The facts adduced, occurred during a voyage to Bengal. The fatal cases, as well as those of favorable event, are faithfully mentioned, for this is an ingenuousness we owe to society in every scientific and medical inquiry.

The Lord Duncan* sailed from the Downs on the 14th of October, 1802, and arrived at the Cape of Good Hope on the 22d of December; during which time two seamen were attacked with dysentery: at the Cape one of them, who was advanced in life and very infirm, died. On the 24th of February, 1803, three hundred and sixty soldiers embarked for Madras. In the passage of about eight weeks, twenty had severe dysenteric complaints, one of whom died, and an infant child. Having wet, tempestuous weather off the Cape, the disease appeared epidemical. At Madras, and from thence to Diamond Harbour, a period of a month, eight had the dysentery. During the ship's stay in India, which was six months, a great number suffered severely under the same complaint, but only one died. Off Kedgeree and Saugor Island, in September and October, the remittent fever was very severe, and often fatal, the dysentery raging at the same time.† Homeward

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* The voyage was completed in eighteen months.

† The number of sick on board the Lord Duncan, during the six months in India, was 105, and only two died of disease, and one from an accident! This

ward bound, many slight cases occurred, and some in a violent degree. Calomel was the remedy always resorted to with advantage.

The carpenter, a middle aged man, reduced by almost continual intoxication to a tottering debility, being harrassed by quotidian ague and the dysentery, died as we left Bengal.

Excessive heat and cold are powers perhaps equally debilitating, but the alternation of heat with cold is more injurious than either. Heat succeeded by cold and moisture, is generally, I believe, one principal cause of the dysentery; and Dr. Cullen observes, that "it happens in the same circumstances and seasons which considerably affect the state of the bile in the human body. But as cholera is often without any dysenteric symptoms, and copious discharges of bile have been found to relieve the symptoms of dysentery, it is difficult to determine what connection this disease has with the state of the bile."

Does it not appear more than probable, that a deficiency rather than a redundancy of bile in the alimentary canal, is the cause of the dangerous symptoms of the dysentery? for from derangement in the functions of the liver, the bile, whose properties are known to be antiseptic, is prevented

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This is a very small proportion considering the oppressive heat of the climate, and the various noxious exciting powers to which a seaman's life is continually exposed!

Windsails and fumigation, with sulphur and gunpowder, were constantly employed in the voyage outward. It may be observed that swabbing the beams and deck with common vinegar, though recommended in medical writings for ages past, is not attended with its boasted good effects. The volatile or spirituous part of it soon evaporates, and the consequent dampness, which is so extremely prejudicial to the healthy and much more to the diseased state, is sufficient confirmation that no salutary effect can result from its use. Even distillation (Lavoisier) does not deprive this acid of all its unnecessary water; for this purpose it may be exposed to a degree of cold from 19° to 23° of Fahrenheit; by this means the aqueous part becomes frozen and leaves the acid in a liquid state, considerably concentrated. If half the quantity of vinegar that is wasted in the manner above alluded to, was served out as a corrector of salted diet, to the ship's company, I am persuaded the scurvy would be mnch less prevalent and seldom so formidable in its symptoms and progress. A good allowance of this article and mustard, perhaps was the cause of an exemption from any scorbutic complaint in the outward bound voyage. I would also strenuously recommend fumigation with nitrous vapour. It is of superior efficacy in preventing and mitigating the violence of disease, and also much less expensive and unpleasant than the method above mentioned. It oxygenates the atmosphere more successfully, and its universal adoption in his majesty's navy, is the most forcible testimony that can be urged in favour of its usefulness.

prevented from passing through its proper and legitimate channel, and from this source the mucous excretions become so putrid and acrimonious. Obstruction in the common duct may be owing to spasm, torpor, or paralysis; and when there is pain over the pit of the stomach, which very frequently occurs, I suppose the seat of it to be the extremity of the bile duct, where it terminates in the duodenum.

In England, the dysentery or cholera occurs generally about autumn, and more particularly after a sultry summer, when bilious intermittent and remittent fevers prevail. It is seldom fatal, and when that does happen, no ulceration or tubercles in the intestines can be found;* nothing more than a gentle laxative, with proper regimen and cordials, being required to effectuate a cure.

There is perhaps some plausibility in the opinion, that the nature of the dysentery resembles the epidemic catarrh or influenza. The application of cold and moisture will certainly produce both diseases. The mucus membrane of the nostrils is similarly affected to the mucus membrane of the intestines; and to there being more extension of surface in the latter, may be ascribed the greater severity of the dysentery. In the catarrh, the mucous, from its ichorous quality, inflames and swells the lip; and inflammation of the inferior part of the rectum, will occasion the distressing tenesmus which is such an agonizing symptom of the dysentery. The afflux of humours in both, is of the same purulent kind. The liver too of those who died of *catarrhus contagiosus,* has been generally diseased;† and the same method of cure will nearly apply to them both. These circumstances strongly point out the analogy between the two diseases.

In the severe dysentery of hot climates, the liver is more or less affected, and hence the increased violence of every symptom. The eyes of every patient which I have seen, have been considerably tinged with yellow. The obstruction in the *ductus communis,* for bile has been said to be the natural purge of the intestines, and the inverted motions of the lacteals from debility, account for the white mucous evacuations, resembling chyle; and hence the salutary effect of mercury and opium in removing the offending cause, and promoting the healthy action of a set

* Vide Baillie's excellent book on Morbid Anatomy, p. 175.
† Darwin's Zoonomia.

set of vessels so important to the support of the system. According to this opinion, brisk cathartics, as they carry off so much of the fluid, elaborated by the process of digestion, are improper. But a Dr. Wade has written a book,* wherein he attacks with haughtiness and vehemence, all practice but that which he struggles to defend, viz. *purging!* Never man manifested more anxiety and groaning of spirit than he does in persuading his readers of the incontrovertible truth of his doctrine. Every medicinal power, though recommended by the consent of the highest characters, he contumaciously rejects, to give room for the universal purging despot, whose influence he wishes to extend over every form and modification of disease. This is in perfect harmony with the old system, which enjoins bleeding in hæmorrhages though in a nearly exhausted subject. *Cantilenam eandem canis.*

In a book called Observations on Hepatic diseases, the dysentery is attributed to a diseased liver. Though written in a curious style "with many holiday and lady terms," the arguments appear sufficiently conclusive. The fatal cases and the dissections are related; and in all, the liver or its appendages were found in a morbid state. Sir John Pringle describes four dissections of dysenteric patients. In the first, the liver was not apparently altered by disease, but the bile was thick, ropy, and of a dark hue. In the second, the liver was small and sound, but the gall-bladder was of an uncommon size and full of dark coloured bile, thin though somewhat curdled. An enlarged spleen. In the third, the liver was of an extraordinary bulk, weighing ten pounds, with an abscess. The gall-bladder was of an immoderate size, and full of thin black bile. In the fourth, the liver was in a sound state, the gall-bladder was empty of bile and contained only air. In all these cases, mortification of the large intestines had taken place, and a tenderness of all the viscera, the whole alimentary canal containing nothing but air.

From this affection of the liver, Sir, which has hitherto been overlooked by most practitioners, or only regarded as merely adventitious, I conceive the disease, both in the East Indies and everywhere else, to be so severe and dangerous. But this affection does not *alone* demand the necessity

* See Select Evidences, &c. &c. by John Peter Wade, M.D.

cessity of mercury* in the dysentery. Dissertations have been purposely written to recommend it even in low fevers, and its specific power in many infectious diseases, as syphilis, &c. warrants the opinion that contagion itself affecting the human system, may be deprived of its principal force by the prudent administration of this celebrated mineral.

It would be an important question to decide, Sir, whether the dysentery is, or is not contagious. The inquiry would involve an extensive discussion incompatible with the limits prescribed for this work, but a few observations may be necessary. The opinion that the dysentery arises from a specific contagion is certainly unfounded. In crowded ships the best opportunities present themselves of ascertaining this fact, and I never saw a case which could be referred with certainty to contagion. Pringle seems to doubt the sagacity of Sydenham and Willis, because they did not find that the dysentery was contagious. Sydenham's history of the epidemic, I believe to be very faithful and accurate; and no symptom or medical fact could have reasonably escaped the notice of such an eminent practical physician. Experience qualifies the proposition, that the same noxious exciting powers will act differently on different constitutions. If they induce diseases depending on debility, the indication of cure will be the same; as the system, whether affected with the dysentery, typhus fever, or other asthenic diseases, requires stimulant operation for the re-establishment of the healthy state. Leeuwenhoeck, the celebrated microscopical philosopher, and Linneus, discovered through their glasses, insects in the mucus of the

* When even mercury does not produce soreness and tenderness of the mouth, it is probably of no service. I remember seeing a young man of a weakly habit at Calcutta, under the care of a surgeon of some eminence, who had been ill of the severe dysentery twenty days, and during that time had used two drachms of ung. hydrarg. and about twelve grains of calomel every day. His mouth was not the least affected and the disease had not abated in its violence. In this case the calomel was not combined with any opiate or astringent, which accounts for the continuance of the flux. I afterwards heard, that on the fourth week of the disease, abscess of the liver had formed, and its suppurating internally, occasioned his death. The Herculean practice which has become so popular with respect to mercury, and which seems to be absolutely necessary to obviate the fatal tendency of diseases incident to tropical climates, has astonished many medical men who have visited the hospitals in India. And even private individuals, aware of its efficiency, have calomel constantly by them, which they take immediately on the approach of indisposition.

intestines of dysenteric patients; and it has been sagely conjectured, that floating in the atmosphere, they have produced the complaint. Consequently, the fæces not being immediately removed, have been supposed to be highly contagious. By increasing the malignity of the air we breathe, they will of course be injurious, but they will not produce the dysentery by a specific power. It would be well if medical men would attend more seriously to this question, and not have such an implicit dependance on the representation of others.

Along with the mucus the villous* coat of the intestines is frequently separated and discharged, as appears by its filamentous and organic structure. The same coat of the stomach is also often abraded. Thus the tunica nervosa becomes exposed and bare, and hence that pungent and scalding pain on swallowing solid food and even liquids in the severe stage of the dysentery.

Various reasons have been given, of so much pure blood being evacuated by stool in this disease. Hæmorrhagies of this kind generally proceed from deranged action of some part of the venous system. For when either direct or indirect debility is established, or the excitability nearly consumed by repeated intoxication, the veins cannot propel the blood forward to the heart with sufficient impetus, as is exemplified by the oozing of thin dark coloured blood, from different parts of the body, in the last stages of putrid fever and scurvy. This diminished energy, when there is an hepatic affection, may predominate in the vena portarum,† and hence the great quantity of blood which is frequently discharged in the severe dysentery. The symptom is not uncommon amongst those much reduced by an excessive indulgence in strong fermented liquors.

From my experience in marking the characteristic symptoms of the dysentery, the patient first complained of chilliness and lassitude, with dry febrile heat, and then griping pains, and frequent purging, attended with tenesmus. The pulse was small and quick, a suffusion of yellow soon appeared over the tunica albuginea, and the complexion a little jaundiced. The evacuations by stool at first, were of frothy mucus, and occasionally streaked with blood, but never of a scyballous appearance; and what is perhaps

* Vide Edinburgh Essays, vol. vi. p. 150.

† Dr. Saunders supposes the chronic inflammation of the liver to originate in the vena portarum; and a flux of blood downwards is an indication of a diseased liver.

perhaps more singular, there was no flatulence in the bowels. The griping and tenesmus became excessively severe. The calls to stool grew almost constant, but nothing was voided, except a little slimy tenacious mucus. Some had frequent prolapsus ani, violent dysuria, and lancinating pains over the pelvis and abdomen. There was an evident imbecility in the intellectual functions, with an incoherence of thought and expression. The pupil was contracted. A hiccup came on. Sometimes black fœtid matter was vomited, and the most excruciating symptoms supervened. The pulse became languid, and scarcely perceptible; the stools intolerably offensive, often nothing but blood; and the disease being left to itself, death soon closed the catastrophe.

I have thus drawn the progress of the Dysentery, as uninterrupted by the operation of medicine; but when early application is made for assistance, the dangerous symptoms are generally soon alleviated.

The sympathy between all the floating viscera of the abdomen is sufficiently proved by experience. When the intestinal canal is diseased, the contiguous membranes will become diseased also. The mesentery will inflame, suppurate, mortify, or become schirrous; and from induration of the glands, a wasting of the body will inevitably ensue, and a gradual decay of the energies of nature. On this principle we may account for that lingering state of the dysentery, when not even a glimmering of hope can be entertained of a favourable termination.

Respecting the cure, Dr. Mead says, "Semper primum sanguinem mittere expedit;" but the adoption of such practice is often pregnant with much mischief, and is always inadmissible in a hot climate. I never saw inflammatory symptoms so urgent as to require particular attention. On the contrary, the torpor of the brain, stomach, and other important viscera, indicate a penury rather than an exuberance of blood; and the rapid decay of all the vital powers, is the most pressing and dangerous enemy that we have to cope with. Emetics have been greatly recommended, and at the commencement they may be of use in evacuating and clearing the biliary ducts, but afterwards I conceive them to be very doubtful auxiliaries. The application of a blister on the abdomen is much more distressing to the patient, than any benefit I ever saw derived from it. Peruvian bark conjoined with opium was given with an intention of more certainly counteracting the dissolved state of the fluids, but the stomach seldom

retained it. The addition of absorbents and aromatics were often also unsuccessful. Sir J. Pringle, apparently, thinks every purgative beneficial; but the ease obtained by purges is always momentary and fallacious. The temporary exhaustion produced by such medicines, gives deceitful quiet, which is constantly succeeded by still more violent pains than before. You, Sir, have also recommended purgatives in your valuable and interesting Observations on the Diseases of Jamaica; they may have done good, but I have not myself found their efficacy in the few cases that have come under my observation. The exhibition of enemas I had formerly found, by their mechanical irritation, only exasperated the symptoms, and more particularly when the rectum was supposed to be ulcerated. Warmth, in general, is of manifest advantage; fomenting the abdomen with warm vinegar, and afterwards the application of a few folds of flannel round the body, being of eminent service. The torpor and inverted motion of the stomach will be relieved by elixir of vitriol, opium, and the essential oils. The combination of opium and calomel, prevents the catharsis and nausea which would result from the use of calomel alone, and they form perhaps the noblest remedy we are yet acquainted with.*

We are even told by Dr. Killner† that the dysentery has been cured by a violent drubbing; which, though whimsical enough, is, I think, extremely probable, as the excitement occasioned by such a stimulus, will produce an accumulation of sensorial power, according to Dr. Darwin, and thus overcome the torpor and debility attendant on the disease. The learned votaries of Venus can explain similar curious phenomena. And it is a known fact that a diarrhœa will be checked or removed‡ by the stimulus of a flannel shirt worn next the skin.

The celebrated Sydenham had great confidence in the powers of laudanum, which he says is alone sufficient to perform a cure. About his time many were prejudiced against the frequent use of that invaluable medicine; but Sydenham found

* A small dose of Dover's powder, or antimonium tartarizatum, every night at bed-time, joined with the mercurial and opiate medicine, seems necessary to the cure.

† Vide Act. Acad. Naturæ Curiosorum, vol. iv. obs. 20. See also a case mentioned by Darwin of two patients in the Edinburgh Infirmary ill of the dysentery, who recovered from the disease, after being stimulated by anger and fighting.

‡ Zoonomia.

found out its virtues, and he thanks the Omnipotent for such a blessing, in a strain of enthusiastic devotion.

From this view of the subject and the medicines which have been recommended, the plain conclusion is, that the dysentery being a disease of the highest debility, chiefly predominant in the alimentary canal, those medicines which produce excitement over the system are only applicable; and particularly the following. Calomel with tartarized antimony and opium; cheerful emotions of the mind; a rich nutritious diet, and Port wine.

Having hastily premised these remarks, which are the result of careful observation, uninfluenced by any preconceived opinion, the succeeding Cases will illustrate the principle and practice more clearly.

CASES.

1. Isaac Morn, armourer, of a robust habit, was seized with frequent purging of mucus and blood on the 21st of May. Six grains of calomel were prescribed for him, and an anodyne at night.

Second day of his illness. Has had acute pain in the lower part of the abdomen. Has great thirst, tongue dry and furred, with a small rapid pulse. Countenance yellow. The stools are still mucous and bloody, and very frequent. Take six grains of calomel joined with one grain of opium directly, and rub in ung. hydrag. ℥jß. on the region of the liver, twice a day.

Third day. Slight nausea; flushes of heat; pulse weak, tongue foul, and thirst urgent. Pain over the scrobiculus cordis. Has had but six stools the last twelve hours, principally of a greenish yellow, and without any streaks of blood. Take frequently of an acidulated drink and repeat the calomel cum opio three times a day, continuing the ointment.

Fourth day. Had considerable griping all day yesterday, and his stools were extremely offensive. The pulse is now regular and the fever subdued. His gums and throat are affected by the mercury. Evacuations more natural, and of a less intolerable odour. Complexion rather clearer. Repeat the medicine, but in smaller doses, and omit the ointment.

Fifth day. To day the purging is less frequent, and he only complains of soreness of the bowels with occasional griping pains. Discontinue the calomel, his mouth being more affected, and take the draughts as prescribed, three

times a day. Tinct. opii gtts. xxx. conf. aromat. ʒj. ol. menth. ppt. gtt. ij. aqua ad ℥ij. M.

Sixth day. The medicine yesterday promoted a gentle diaphoresis and the pain of the bowels abated. Has had two motions the last twenty-four hours of the natural consistence and colour. An absorbent draught with tinct: opii gtt. xx was given last night. Has now no complaint whatever. To continue the medicine a day or two longer.

What analogy or connection there may subsist in the constitution of fevers of the intermittent and remittent type and the dysentery, it is difficult to pronounce; they, however, change into each other with camelion-like facility, exhibiting the symptoms of each in almost regular succession. Can it be the influence of *bile?* What principally leads me to the conclusion, that superabundance of bile has nothing to do with the dysentery is, that I never myself could observe the least reason for the supposition. The disease is, no doubt, in many instances, owing to obstruction, or otherwise a stimulus, which excites an inverted motion of the parts concerned in its production. But whatever there may be wrong in the hepatic system, it is certain that little or no bile passes by the intestines. This subject affords an extensive field for investigation; and what applies to fevers, generally denominated *bilious*, will be treated of in another place.

[To be continued.]

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

IN compliance with the desire of Academicus, I have endeavoured to elucidate the case of the little boy, noticed in p. 461 of your last Number. The remote cause of his illness may, I think, be attributed solely to the effects of cold; which certainly would not have affected him half so severely, if he had breakfasted prior to his exposure. Though there is nothing in the short history of the case, which could lead one to suppose that the child suffered in a peculiar manner from the situations in which he was placed, either before or after breakfast; yet he might, unobserved, have been exposed to a current of air. Though delicacy almost forbids me to animadvert

on

on the means adopted for the recovery of the child, yet a sense of duty imperiously stifles inferior considerations, and declares the propriety of dissenting in opinion, and of pointing out such remedies as might have been conducive to what the parents would have considered a happy event.

Then, advancing on the position that cold was the remote or occasional cause of the child's illness, would not an emetic have had a good effect in overcoming that stricture on the surface, which was certainly the proximate cause of the disease. The perspiration was checked, and those fluids which should have escaped by the skin, were determined to the bowels, producing that congestion which was certainly the cause of bilious dejections. When the apothecary was sent for, I suppose, from his sending a saline mixture, that the child had some sickness at the stomach; the calomel purge was well calculated to rid the bowels from bilious matter, and the blister might have some effect in relieving sickness.

When the physician was called in, he continued the calomel, and ordered blisters to the inside of each leg; his ideas of treatment seemed to coincide perfectly with those of the apothecary. In such cases as these, I have found the happiest effects from emetics in the first instance, followed up by sudorifics; and by way of an auxiliary, I have often had recourse to the warm bath, keeping the child in it until it became faint, after which it has been wiped dry, and wrapped up in flannel, which will in general restore the perspiration, the first grand step towards recovery. That connection which subsists between the bowels and skin is very striking; when the pores are obstructed, diarrhœa or fever, for the most part, supervenes, and is frequently attended with sickness or vomiting; and Sydenham tells us, that these complaints are not to be overcome without the aid of external means, applied for the purpose of producing perspiration, or a determination to the surface of the body. I am of opinion, if the warm bath was resorted to oftener than it is, the art of healing would be greatly benefited. In bilious cases, when the remote causes may be attributed to the effects of cold, and when there is a congestion of blood in the vena portarum and hepatic vessels, does not the warm bath appear to be a remedy likely to be productive of the happiest consequences? In cholera morbus, a disease unparalleled for its violence, and which brings many to an untimely grave, this remedy might be employed with great advantage.

tage. In all fevers, during the state of apyrexia, we find the stomach is relieved from nausea; and when the perspiration is restored, the different parts of the body perform their functions with ease.

There is another remedy for restoring perspiration, which I have employed myself in several instances, and particularly in typhus, or ship fever. I once had a patient, whose fever had continued many days without any intermission, during a voyage to America. I had recourse to such medicines as are generally used on these occasions, without experiencing the least benefit from them; his skin was parched, tongue foul, black, and dry, with every unfavourable symptom. I ordered him to be taken out of his hammock, had his shirt taken off, and several buckets of cold water poured over his head, gradatim, for it was necessary to be cautious in this case, as he was extremely debilitated, and had been delirious for some time; he was wiped dry, wrapped up in blankets, and put to bed again. The cold applied to his head, soon restored the lost energy of the brain, and reason again assumed her throne. The effects of the cold on his body, produced such a degree of reaction, that the stricture of the extreme vessels was easily overcome; he burst out into an abundant perspiration; and from this moment he began to recover, and his cure went on rapidly.

It is well known how difficult it is to prevail upon young children to take medicine; and when administered, its inefficacy, unaided by other means, is too frequently experienced: and where it is obvious, from a review of the occasional causes of a disease, that cuticular secretion forms the most prominent and leading indication of cure, what is more likely to effect this, than the tepid bath? In the hot fit of an intermittent, when the patient is scorched as it were with fever, how sensibly is he relieved when the pores of the skin are forced open, and perspiration begins to flow. But here I must remark, in allusion to that mode of treatment which I have recommended, that many of our first-rate physicians have had candour enough to acknowledge, after the death of their patient, that a different treatment might have crowned their endeavours with success; yet such declarations are not clothed with the garb of conviction. Medical men are certainly instrumental towards the recovery of people from sickness; but when the decree of death is passed, the most splendid abilities lose their lustre amidst the dark gloom of expiring nature!

nature! The fatal symptoms of coma and convulsions, which closed the scene of this child's illness, might have been occasioned by hydrocephalus.

I am, &c.

Romsey, May 11, 1804. RALPH CUMING.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

ANY thing like vindictive controversy or replications of illiberality or malevolence, ought to be universally deprecated and scouted; but in what manner such have (as Medicus has asserted in your last Journal) tended more to embarrass than to elucidate the science of medicine, demands a more satisfactory proof than mere suggestion.

What has excited controversy of such obnoxious contexture, seems to be the fair relation and detail of certain experiments, or the result of individual practice, upon the salutary operation of cold affusion in arthritic paroxysms. From the recent introduction of this mode of treatment of gout, has arisen a conflict which, although it has little or no claim to candour, nor is it indicative of benevolent interest for public welfare, is certainly incapable of degrading your Journal, embarrassing the science, or sinking the exalted establishment of medical enquiry into contumelious puerility.

I must conclude with Medicus, that theories are very often intended more to convey plausible and ingenious opinions of subtle speculatists, than to lead to a prompt and successful practice; yet I cannot but observe, that whatever may be our deficiences in the knowledge of the operations of the nervous system, there may be good room for cautious experiments and warrantable deviations from general practice, if they are derived from strict analogy, and supported by a successful issue.

It much surprises me, that Medicus, who starts as a reformer of medical discussion, and the strong advocate for the plain and simple detail of all means from the weakest to the most potent, conducive to the cure of disease, should so far forget himself as not only to fall into the defects of which he so much complains in others; but also, that he should depreciate the merits and the good effects derived from

from the practice of cold ablution in gouty affection. According to him, the *practice is contrary to all sound experience*; not *one instance*, however, does he record where he observed its pernicious effects. Instead of facts he contents himself with assertions.

If gout be a general disease, (as Medicus believes it to be) why should not local means contribute to the cure, or remove that local affection which is the principal part of the disease; the removal of which, as in many cases of symptomatic affections, might accelerate the progress of a general, or at least temporary cure of the whole? But we know as little concerning the causes of disease in general, especially of gout, or how they induce diseases, as we do of nervous operations; and in how many instances do we endeavour to cure general morbid action by destroying the principal leading symptoms? But the grand question seems now to be, whether the gout be a local or general affection? or whether, after the frequent repetitions of its severity, it may not become catenated with, or form general morbid sympathies? Now, should the gout be originally a general disease, there can be no pathological reason why the practice of local means, which vanquishes the most harrassing symptom, should not induce a salutary change in the diseased movement of the animal machine, and by that process, produce a restoration of its healthy faculties. By the same rule, those diseased sympathies arising from local arthritic affections, should gout be primarily unconnected with the system, may be interrupted, and more salutary, o ıthe accustomed healthy action redintegrated by the mere influence of local remedies.

Let the opinions of medical men rest upon either side of the question, no ground can be tenable for uncandid and inefficient declamation; and a stubborn inflexibility in opposing practical and laudible innovation is more injurious to science than the greatest absurdity of the most flimsy hypothesis.

I could adduce as many instances in support of the efficacy of the reduction of temperature in gouty paroxysms, by cold water, as Medicus has supposed instances contraindicative of its use or inadmissibility; but I shall content myself in the relation of a single instance, where the application of cold water was attended with the happiest result. In this case it was not directed by practical experience or legitimate speculation, but by the mere instinctive impulse of the suffering victim.

A super-

A superintendant of a fishery in Newfoundland, labouring under a gouty paroxysm, and, as is usual, strongly advised to remain confined to his room, suffered severely from the pain and great inflammation in one of his feet; but wishing to discharge his official duties, he became determined, against all persuasion, to go to sea in one of the fishing vessels. He silenced all opposition to his resolve, by crying out that his pain and the heat of the affected part were so great, he was confident nothing could abate them but cold; and if that did not relieve him he would as lief die at sea as suffer so much torment in bed. The consequence was, that the poor sufferer was carried to the vessel, in which he put to sea, and was obliged, as is usual, to remain for several hours nearly up to his knees in salt water. In this situation, to the great astonishment of every one present, the pain and inflammation abated, and the man ceased to complain; on his return home he insisted on his wet clothes remaining upon him, and in case of the symptoms returning, to have buckets of sea water in readiness. By this treatment he always procured relief; and his habits of living induced many severe accessions, almost every year, for which he would be carried into the sea and there remain until the accustomed alleviation of his symptoms took place; besides this, he had the inflamed parts wrapped in cloths immersed in the same fluid, which never failed of procuring the desired relief.

St. George's Place, Blackfriar's Road,
April 10, 1804.

PERSCRUTATOR.

We request this Correspondent to send for his other paper, as some parts require elucidation. ED.

Translation of the Report lately made to the Class of Mathematical and Physical Sciences, of the National Institute of France, in relation to the Prize founded by the First Consul, subscribed by the Names, LAPLACE, HALLE, COULOMB, HAUY, *and* BIOT, *Reporter.*

THE National Institute, which has taken an active part in the great discoveries with which the theory of Electricity has been lately enriched, feels, in all its extent, the importance of the subject indicated by the First Consul. Of all the physical forces to which the bodies of Nature are subjected, electricity appears to be that which manifests its

its influence the most frequently. It not only acts on inorganic bodies, which it modifies or decomposes, but organized bodies themselves experience the most astonishing effects from it. That which was, for the antients, only a simple result of some attractive properties, is become, for modern philosophers, the source of the most brilliant discoveries.

We may divide the history of electricity into two periods, which are distinguished, as much by the nature of the results, as by that of the apparatus employed to obtain them. In the one the electric influence is produced by the rubbing of glass or resinous matters; in the other, electricity is put in motion by the simple contact of bodies between themselves. We should refer to the first of these two epochs, the distinction of the two species of electricity, resinous and vitreous, the analysis of the Leyden bottle, the explication of the thunder-storm, the invention of *paratonneres*, (Franklyn's iron rods, &c.) and the exact determination of the laws, according to which the repulsive force of the electric matter varies with the distance. The second comprehends the discovery of the muscular contractions, excited by the contact of metals, the explication of these phenomena by the movement of metallic electricity; and, lastly, the formation of the electric column, its analysis, and its different properties. Volta has performed in this second period, what Franklyn did in the first.

The sciences are now so connected among themselves, that whatever serves to perfect the one, at the same time advances the others. Under this point of view, Galvanism will form a memorable epoch in their history; for there are few discoveries which have given to Physics and Chemistry so many new facts, and so different from what were known before. Already has the *ensemble* of these facts been referred to a general cause, which is the movement of electricity; it remains to determine with precision the circumstances which accompany them, to follow the numerous applications which they offer, and to discover the general laws which are perhaps included in them.

The greater part of the chemical effects exhibited by the new apparatus have not received explications completely satisfactory, and it is so much the more important to know them well, as they furnish to chemistry, means sufficiently powerful to decompose the most intimate combinations. It is equally interesting to examine whether the electric properties that certain minerals acquire in their variations of temperature, do not depend on a disposition of their elements

elements, analogous to that which constitutes the column of Volta. And lastly, it is desirable that the theory of electricity, augmented by these new phenomena, should be compleatly submitted to calculation in a general, direct, and rigorous manner; and the steps that have been already taken in this career have proved that this difficult subject demands the sagacity of ingenious Physics, and the succours of the most profound Analectics.

But it is, above all, in their application to animal economy, that it highly imports us to consider the galvanic apparatus. It is already known that metals are not the only substances, the contact of which determines the movement of electricity. This property is common to them with certain liquids; and it is probable that it extends, with different modifications, to all the bodies of Nature. Do not the phenomena which the torpedo and other electrical fishes offer, depend upon an analogous action, which may be exercised between the different parts of their organization? And does not that action exist with a degree of intensity less sensible, but not less real, in a number of animals, much more considerable than has been generally believed? An accurate analysis of these effects, a complete explication of the mechanism which determines them, and the aggregation of those which the column of Volta presents, would give, perhaps, a key to the most important secrets of animal physics. In thus considering the *ensemble* of these phenomena, we can presage the possibility of a great discovery, which, by developing a new law of Nature, would refer them to one single cause, and connect them with those which the movement of electricity furnishes us with, in minerals.

These considerations have doubtless had their due influence on the class; and if it has not proposed a prize for the improvement of this part of physics, it is because the extent of the subject seeming to demand more than one *concours*, it could not devote to that alone, the encouragements which it owes, in general, to all the branches of useful knowledge. However, each one of its members, and all the learned of Europe, ought seriously to wish, that the researches of Naturalists may be directed towards this important end, and they should congratulate themselves on seeing their wishes now fulfilled in the most compleat manner.

To answer the intentions of the First Consul, and to give to this *concours* all the solemnity that the importance of the object, the nature of the prize, and the character of him that has founded it, require, the Commission unanimously

mously proposes the following project: The Class of Mathematical and Physical Sciences of the National Institute, opens the general *concours* demanded by the First Consul. All the learned of Europe, including the members resident and associate of the National Institute, are invited to the *concours.* The Class does not expect that the Memoirs should be directly addressed to it. It will crown every year, the author of the best experiments that shall come to its knowledge, and which shall have accelerated the progress of science. The grand prize will be given to the person whose discoveries in the history of Electricity and of Galvanism, will form an æra, or a memorable epoch. The present report, including the letter of the First Consul, will be printed, and will serve for a program. Done at the National Institute, 11 Messidor, year 10.

Catalogue of such British Plants as have been found in any Shape serviceable to Man, whether in a medicinal, œconomical, culinary, or agricultural Point of View, together with an Account of the Uses which they have been made to answer, and an accurate Botanical Description of each Plant.

(Continued from our last, pp. 439—450.)

TRIANDRIA, DIGYNIA.

9. CALAMAGROSTIS. *C. arenaria.* *Arundo arenaria.*

Ang. Sea mat weed, marram, helme, sea reed

Gen. Desc. Calyx a husk of two valves, containing one flower. Blossom hairy at the base.

Spec. Desc. Awn-less; *panicle* spike like; *leaves,* edges rolled inwards, pointed and thorn-like at the end; whilst growing sometimes flat with green and white streaks. *Spikes* four to six inches long, three-quarters of an inch broad. *Sea shore.* BLOSS. June, July.

Use. Planted on the sea shore, it is of much service in preserving the adjoining fertile lands; it grows only on the very driest sand on the shore, which it prevents the wind from dispersing over the adjoining fields, as happens frequently where this grass is not found. If the seeds of this plant had been sown upon the shore, many acres, now rendered useless by the sand, might have been saved from destruction. The Dutch have profited by the discovery of this circumstance.—*Linné.* On this account the extirpation of this grass was prohibited by Queen Elizabeth; and

 in

in Norfolk, according to Mr. Woodward, it is now planted on the flat coasts, to repel the sea. That gentleman observes that where it grows, a sand-hill immediately gathers round it, and he thinks that some of our sandy cliffs may have been thus formed. The manufacture of mats and ropes of this grass, is a principal article of trade at Newborough in Anglesea.—*Withering.*

10. CALAMAGROSTIS. *C. variegata, phalaris arundinacea.*

Ang. Painted lady grass.

Gen. Desc. As above.

Spec. Desc. Panicle large, loose strap-spear shaped, five to eight inches long, one to two in breadth, stiff and strong, varying in colour from white to pale green in the shade, in the sun to rich shades of purple and yellow, with large dark red anthers; *leaves* broad, flat, half an inch broad, and the variety cultivated in gardens beautifully striped green and white, sometimes purplish; straw simple. *Banks of rivers, ponds.* BLOSS. July.

Use. It is much used in some places for thatching ricks and cottages, and is more durable than straw. Cattle eat it, but as it is of a hard texture they are not fond of it. In the province of Scandia they mow it twice a year.—*Linn.* The oftener it is mown, the more acceptable it is to cattle.

11. AIRA. *A. cæspitosa.*

Ang. Turfy hair grass. Hassocks, rough caps, bull's faces.

Gen. Desc. Calyx two-valved; two-flowered, without any intervening substance between the florets.

Spec. Desc. Petals woolly, awned at the base; awn straight, short; *leaves* flat; *panicle* expanding, beautifully purple and silky, six or eight inches high and half as broad; trails on the ground sometimes to the length of several feet. *In moist meadows and woods.* BLOSS. June, August.

Use. The ashes burnt make a good manure. Its leaves are the coarsest and roughest of all the grasses growing in pasture or meadow grounds, and, unless forced by hunger, cattle will seldom touch them. It produces abundance of leaves, but few flowering straws, and has a very disagreable appearance in meadows, being apt to grow in tufts and occasion great irregularities on the surface, and occupying ground that might produce better grass. To get rid of it the land should be drained, and the tufts pared up and burnt.—*Mr. Swayne.*

12. ME-

12. MELICA. *M. nutans. M. montana.*

Ang. Mountain melic.

Gen. Desc. Calyx two-valved; two-flowered, with a little substance on the pedicle between the florets; nectary one leaf; stamens dilated at the base.

Spec. Desc. Petals not fringed; *panicle* drooping, undivided, three or four inches long.

Use. In the isle of Rasa they make this grass into ropes for fishing nets, which are remarkable for lasting long without rotting.—*Pennant*, 1774, *p.* 297. Cows, horses, and goats eat it.

13. FESTUCA. *F. fluitans.*

Ang. Flote fescue grass.

Gen. Desc. Calyx two-valved; spickets oblong, roundish; husks tapering to a point or terminating in an awn.

Spec. Desc. Panicle branched, upright, very long, issuing from a long two-edged sheath; *spikets* nearly sitting cylindrical awnless; *blossom* awnless, mostly ten-flowered; *straw* striking root at the joints; *leaves* floating flat on the water. *In wet ditches and ponds, common.* BLOSS. June, September.

Use. The seeds, though small, are very sweet and nourishing. They are collected in many parts of Germany and Poland, and even brought to the tables of the great, under the name of *manna seeds,* as an agreeable and nourishing food, and are esteemed a delicacy in soup and gruels, upon account of their nutritious quality and grateful flavor.—*Lightfoot, Withering.* When ground to meal, they make bread very little inferior to that in common use, of wheat. The bran, separated in preparing the meal, is given to horses for the worms, but care must be taken that they are kept from water for some hours afterwards. Geese are very fond of the seeds, and well know where to seek them.—*Withering.* It is a good grass to sow in wet meadows, of a succulent and nourishing quality, and cattle are extremely fond of it, so much so that horses and swine will run risks to get at it.

14. AVENA. *A. nuda.*

Ang. Naked oat, pilcorn, pills.

Gen. Desc. Calyx two-valved; many-flowered; awn from the back of the blossom twisted.

Spec. Desc. Panicled; *calyx* three-flowered, shorter than the receptacle; *petals* awned on the back, third floret awnless. The seeds when ripe fall out of the husks. *Spikets* with two or three florets. Awn neither twisted nor jointed.

Panicle

Panicle five to eight inches long, lower branches subdivided. Calyx and blossom ribbed. Blossom, July.

Use. This is nearly as good as the cultivated oat; it serves to make gruel or oat-cake, and feeds cattle full as well.—*Withering.* It is cultivated in Cornwall, and sells there at the price of wheat.—*Ray.* It is cultivated also in the isle of Arran on the western side of Ireland.

15. Arundo. *A. phragmites. A. vallatoria, A. vulgaris.*

Ang. Common reed

Gen. Desc. Calyx two-valved; blossom awnless; surrounded with down at the base.

Spec. Desc. *Calyx* five-flowered; panicle spreading; *florets* four or five, smooth, but with down at the base arising from the spike-stalk. *Rivers, lakes, ditches.* Bloss. July.

Use. The panicles are used by the country people in Sweden to dye woollens of a green colour. The reeds are much more durable than straw for thatching; they are used to lay across wood work, as the foundation for plaster floors, and to make garden screens against cold winds.

16. Lolium. *L. temulentum.*

Ang. Darnel. Annual darnel grass.

Gen. Desc. Calyx one leaf fixed, many-flowered; spikets alternate.

Spec. Desc. *Spikets* awned, compressed, many-flowered; *straw* rough when stroked upwards, and *leaves* rough when stroked downwards; *spikes* four to six inches long, rough; terminating spiket with a two-leaved calyx, and the lowermost spikets have a minute inner leaf to the calyx. *Ploughed lands, mostly among barley and flax, not common.* Blossom, July, August.

Use. The seeds of this grass will intoxicate man, birds, and beasts; and, taken in any considerable quantity, will bring on convulsions and death.—*Lightfoot.* Mixed with bread corn, they produce but little effect, unless the bread be eaten hot; but, if malted with barley, the ale soon occasions drunkenness.—*Linné.* Made into bread with a small proportion of wheat, and eaten repeatedly, they produced vomiting, purging, violent cholics, and death. *Monthly Rev. vol.* lxvii. *p.* 559. Sheep are not fond of this grass.

17. Elymus. *E. arenarius.*

Ang. Sea lime grass.

Gen. Desc. Calyx lateral, two-valved, several together, many-flowered.

Spec. Desc. *Spike* upright, compact, long, woolly; *calyx* woolly,

woolly, longer than the floret; *little spikes* two together, straight, two florets, awnless; *leaves* bluish green or whitish, rolled inwards, sharp pointed. *Sea-coast in loose sand.* BLOSSOM, July, August.

Use. This grass also is of much service in resisting the dispersion and spreading of the loose sand on the sea-shore. Probably it might be capable of being formed into *ropes,* like the *stipa tenacissima* in Spain.—*Withering.* Cows, horses, and goats eat it; sheep refuse it.

18. TRITICUM. *T. repens. Gramen caninum, gramen dioscorides.*

Ang. Dog's grass, couch grass, squich grass, quitch grass, couch wheat.

Gen. Desc. Calyx two-valved, solitary, mostly three-flowered; floret bluntish.

Spec. Desc. Calyx four-flowered, awl-shaped, tapering to a point; *leaves* flat. *There are four varieties differing in the number of flowers of the calyx and awns. See Bot. Ar.*

Use. The root is the *grass-root* used in medicine; it is *diuretic* and *attenuant.*—*Hill, Lightfoot.* Boerhaave recommends the juice of these roots, drank liberally in obstructions of the viscera, particulaly in cases of schirrous liver and jaundice. Cattle are frequently found to have schirrous livers in the winter, and they are soon cured of them, when turned out to grass in the spring. Dogs eat the leaves of this grass to excite vomiting. At Naples, the roots are collected in large quantities, and sold in the market for the food of horses; they have a sweet taste, something approaching to that of liquorice; when dried and ground into meal they have been made into bread in years of scarcity.—*Withering.* This is a most troublesome weed in arable lands, and can only be destroyed by fallowing in a dry summer; but Mr. Pitt observes, that though this is the most common kind of *squitch* in gardens, that which is chiefly prevalent in arable lands, consists of other species of grasses, as the *agrostis,* the *holcus mollis,* and the *avena elatior. Staffordsh. Rep.* Horses eat the young leaves but leave them when fully grown; cows, sheep, and goats eat them.

TRIANDRIA ENNEAGYNIA.

19. EMPETRUM. *E. nigrum.*

Ang. Black berried heath, black crow berries, crake berries.

Gen. Desc. Male and female flowers on separate plants;

Calyx three-div. bloss. three-petals; male, stamens long; female, berry with nine seeds.

Spec. Desc. *Stems* trailing; *bark*, scaling off, brown, inner, yellow; *bud* terminating, of five leaves; *leaves* in fours, three-square, on leaf stalks; *flowers* from the bosom of the leaves, sitting, solitary, sometimes *herm. calyx*, whitish, *petals* and *filaments* purple, *anthers* black. On the fertile plant *leaves* in fives, deep green, sitting, rolled back; *stem* redder; *petals* dark purplish red, *anthers* flesh colour, *pistil* black, *berries* brown black. *Mountains, high heaths, rocks, bogs, moors, frequent.* Bloss. April, May.

Use. Boiled with alum, the berries afford a fine dark purple dye. The Highlanders frequently eat the berries, as do children sometimes, but they are not a desirable fruit; and, if taken in large quantities, they occasion head ach. Grouse feed upon them. Goats eat the leaves, but are not fond of them; horses, cows, and sheep refuse them.

Class IV. Tetandria.

Tetandria, Monogynia.

1. Dipsacus. *D. fullonum.*

Ang. Teasel, manured teasel.

Gen. Desc. *Calyx common*, many-leaved; *proper* superior; *receptacle* chaffy.

Spec. Desc. *Leaves* sitting, serrated; chaff bent backwards; scales very hard.

Use. This plant is cultivated for the use of clothiers, who employ the heads with crooked awns to raise the knap upon woollen cloths. For this purpose they are fixed round the circumference of a large broad wheel, which is made to turn round, and the cloth is held against them. The plant flowers in June and July, and the heads are gathered in August.—*Withering.* The leaves of this plant are a good stomachic, but they are not much known as such.—*Hill.*

2. Scabiosa. *S. succisa. Succisa glabra. Succisa sive morsus diaboli.*

Ang. Scabious, devil's bit scabious.

Gen. Desc. *Calyx common*, many-leaved; *proper*, double, superior; *receptacle* naked, chaffy; *seed* wrapped in the proper case.

Spec. Desc. *Blossom* four-cleft, equal; (bluish purple, flesh coloured, or white, sometimes double) *stem* undivided; *branches* approaching; *leaves* egg spear shaped; *stem and leaves* rough with hair; *flowers* in globular cups;

 proper

proper cup four-cornered, hairy, with four shallow clefts, the segments fringed with white hairs; *nectary* inclosing the germen, crowned with a concave glandular receptacle, armed with four or five strong reddish black bristles; each floret is besides furnished with a green spear shaped leaf, terminated by a white taper bristle. *In fields and pastures, common.* BLOSSOMS June, August.

Use. A strong decoction of this, continued for a good while together, is an empirical secret for *gonorrhœas.—Withering.* The dried leaves are used to dye wool yellow or green.—*Linné.*

3. SCABIOSA. *S. arvensis. S. pratensis hirsuta. S. major vulgaris.*

Ang. Common scabious. Field scabious.

Gen. Desc. As above.

Spec. Desc. Blossom four-cleft, radiating; *leaves* wing cleft, jagged, rough, spear shaped; *stem* rough with strong hairs, sometimes smooth, spotted with purple at the bottom; *flowers* sometimes white, purple, or blue, a little woolly; *proper cup* four-cornered, hairy, with four small teeth; *nectary* inclosing the germen, crowned with a concave receptacle, set with shining glands on the inside, and armed with eight or twelve spear shaped, serrated, greenish, bristly substances, hairy at the base. *Pastures and corn-fields.* BLOSSOMS July, August.

Use. This plant is slightly astringent, bitter, and saponaceous.—*Withering.* It is internally a pectoral, and its leaves are a common ingredient in decoctions of that kind. Externally it cures breakings out in the skin; the way of using it is boiling the juice to the consistence of ointment with lard.—*Hill.* Sheep and goats eat it, but horses and cows are not fond of it.

4. ASPERULA. *A. odorata. Rubeola montana. Aparine latifolia.*

Ang. Woodroof, woodrow, woodrovell, sweet woodruff, common woodruff.

Gen. Desc. Blossom one petal, funnel shaped; seeds two, globular, like cork.

Spec. Desc. Leaves from five to nine in a whirl, spear shaped; *flower* in bundles, on fruit stalks, of a beautiful snowy white; when magnified appears sprinkled with shining, frosted particles; calyx not evidently toothed; *fruit* covered with stiff hooked hairs; *panicle* with three divisions; from five to ten inches high. *Woods, hedges, shady places.* BLOSSOMS May.

Use.

Use. The scent of this plant is said to drive away ticks and other insects.—*Linné.* It gives a grateful flavour to wine. Horses, cows, sheep, and goats eat it.

5. GALIUM. *G. verum.*

Ang. Yellow lady's bed straw, cheese rening, petty muquet, yellow goose grass.

Gen. Desc. Blossom one petal, bell shaped, short; seeds two, nearly globular, beneath.

Spec. Desc. *Leaves* five to nine in a whirl, but generally eight on the principal stem, strap shaped, furrowed, smooth, rolled back at the edges; flower branches short; *blossom* yellow, segments greatly expanded, *styles* cloven deep; *stem* with large joints, cylindrical, scored, a little woolly. *Sides of fields and roads, frequent.* BLOSS. July, October.

Use. The flowers are prescribed by the French in *hysteric* and *epileptic* cases. They will coagulate boiling milk. Boiled in alum water they tinge wool yellow. The roots dye a very fine red, not inferior to madder, and are used for this purpose in the island of Jura.—*Pennant.* Sheep and goats eat it, cows are not fond of it, horses and swine refuse it. This plant is subject to a disease, in which the stem and branches are set with fleshy balls, about the size of a pea, hollow within, and covered with a purplish skin.

6. GALIUM. *G. boreale.*

Ang. Cross wort madder. Cross leaved goose grass.

Gen. Desc. *As above.*

Spec. Desc. *Leaves* four in a whirl, egg spear shaped, smooth, three fibred; *stem* upright; *blossom* numerous, beautifully white, but when dried turning to a dirty yellow. *Mountains in Westmoreland and Wales.* BLOSS. July, Aug.

Use. The roots afford a good red dye for woollen cloths.

7. GALIUM. *G. aparine. Aparine palustris. A. vulgaris.*

Ang. Goose grass, catch weed, cleavers, clivers, cleavers goose grass.

Gen. Desc. *As above.*

Spec. Desc. *Leaves* eight or ten in a whirl, strap spear shaped, rough above, smooth underneath, edges and keel set with prickles pointing backwards; *stem* four-cornered, angles set with prickles pointing backwards, joints woolly at the base; *blossom* white. *Hedges frequent.* BLOSS. May, June.

Use. It is said by Mayerne that three ounces of the juice of this plant, taken twice a day in wine, were found an useful *aperient* and *diuretic* in incipient *dropsies*; but it

has been chiefly esteemed as an *antiscorbutic;* for this purpose, a tea cupful of the expressed juice is to be taken every morning for nine or ten days. When the fresh plant cannot be procured, it may be used in a dried state, as tea. Dioscorides speaks of an *ointment* made of the bruised herb, mixed with lard, as an useful application to discuss *strumous* swellings. A decoction of the plant is also said by him to have been found useful in the way of *fomentation,* in swellings of the glands of the neck, which followed a certain epidemic at Verona.—*M. M. L.* 3, *c.* 104. Dr. Cullen, however, says he has tried it in glandular indurations, without any advantage.—*M. M. ii.* 37.—*See also Med and Phil. Com. v.* 326. And, *Edwards's Treatise on the Goose Grass, &c.* Other species of galium have also been used for medical purposes, especially in *hysteric* and *epileptic* complaints.—*Woodville.* The expressed juice of the stem and leaves, taken to the amount of four ounces night and morning, is very efficacious in removing many of those cutaneous eruptions, which are called, though improperly, *scorbutic.* It must be continued for several weeks.—*Withering.* The branches are used by the Swedes for straining milk. Young geese are very fond of them. The seeds may be used instead of coffee. This plant is eaten by horses, cows, sheep, and goats; swine refuse it.—*Linné.* This plant has the effect of tinging with a florid d colour the bones of animals that feed upon it.—*Guettard, Mem. de l'Ac. de Sc.* 1746—7.

[To be continued.]

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

TEMPERATE discussion is always serviceable to science. In this point of view, Mr. Hume's Remarks on the Edinburgh Pharmacopœia, published in your last Number, are highly valuable. In this city, where the students are by no means disposed blindly to accept the doctrines of their teachers, or to esteem a work the more for being the production of a College, similar observations have been frequently made, and as frequently been replied to. Every thing connected with pharmacy is particularly interesting to me; I therefore have paid a good deal of attention

tion to these discussions; and upon the whole, it appears to me, that the objections which have been made, have generally been the consequence of partial views, inattention, or ignorance. But as Mr. Hume's very candid Observations are the first which have appeared in a publication, which will also admit a candid Reply, I shall take the liberty of answering them, principally with the views of exciting scientific discussion, and obtaining information.

Every one will regret with Mr. Hume, that so many differences, in every particular, exist between the Pharmacopœias of London and Edinburgh; but I do not understand how, upon this regret, he should engraft a general charge of want of precision and simplicity against either or both the Colleges. The charge to many will appear unfounded, and should not have been made without reasons to support it.

Much certainly remains to be done, before a Pharmacopœia shall be composed free from errors and numerous ambiguities; but Mr. Hume has been guilty of illiberality, in applying the epithet disgraceful to these errors and ambiguities, unless he is able either to point out how they may be avoided, or, what would be preferable, and undoubtedly the most advantageous employment both of Mr. Hume's time and abilities, to publish one himself, free from abiguity and error; his improvements could not fail to be acceptable to both Colleges.

Mr. Hume, however, seems to be diffident of his own abilities, and to despair of seeing perfection as well as uniformity in the Pharmacopœias, unless a deputation from each College be authorized to execute this important work. By such a measure, we might certainly procure an Imperial Pharmacopœia, in place of the London and Edinburgh Pharmacopæias; but as certainly, it would be less perfect than either. There is an old vulgar adage, "Many cooks spoil the broth;" and so would many Doctors the prescription. But I find that Critics can disagree as well as Doctors; and on this occasion shall screen myself by pitting one against another, and referring Mr. Hume to the concluding paragraph of the Edinburgh Review of the Edinburgh Pharmacopœia, vol. iii. p. 467. If Mr. Hume, after reading it, shall persist in his opinion, it will be incumbent on him to prove the practicability of his plan.— In attempting to do this, he may perhaps find some assistance in the Preface to Van Mon's Pharmacopœia, where he proposes, that at the peace there should be a conven-

 tion

tion of deputies from all the states of Europe, to establish an uniformity of pharmaceutical practice over this quarter of the globe at least.

Mr. Hume now proceeds to his specific charges against the Edinburgh College. The first is, that we find the same name sometimes put adjectively and sometimes substantively, without any apparent intention; on the contrary, for obvious reasons, liable to lead into error. Now, his obvious reasons are no more apparent to me, than the intention of the College is to him; I must therefore request him to explain them. "The adjective, compositum, is applied at random in all its cases." Mr. Hume surely does not mean that the different cases of compositum are used at random! "Why tack it," says he, "to the tinct. cassiæ sennæ, and not to tinct. mimosæ catechu?" Because, in the latter case, catechu is the only active ingredient; and in the former, cassia is not the only active ingredient. Again, "Why tack it to pil. rhei; there *is* no other Formula with which these may be confounded?" There is not in the Edinburgh Pharmacopœia; but these pills are *compound*, and any other College, or any Hospital or Individual, may publish a Formula for simple rhubarb pills.

To all the objections to the introduction of the Linnæan and chemical names, there is this obvious answer, that Pharmacy is but the application of Natural History and Chemistry to a particular purpose, and cannot deviate from the language adopted in these sciences, without manifest impropriety. The verbosity, the great objection, I have no doubt will be gradually corrected by means of systematic abreviations. In all probability, Linnæus never ventured even to hope that his name would ever be introduced into Pharmacy; but I think that such a prospect would have afforded him the highest gratification. The remaining part of the sentence, "any farther than in Systems of Botany, Natural History, and in a few other similar productions, these names seem inadmissible," is, to me, unintelligible. The objection to the chemical names, that we might as well, in geographical description, substitute solution of muriat of soda, &c. for the word ocean, or oxyd of hydrogen for water, is frivolous. Oxyd of hydrogen has not been adopted by chemists for water, and geography is not a branch of chemistry.

Mr. Hume seems to be surprised at the title, emplastrum gummosum. What would he have it called? Mr. Hume tells us, that the conjunction et and the preposition cum, are

are often used very ambiguously; that in some instances they mean chemical combination, and in others mere mechanical mixture. The cum might, in general, have been avoided; but Mr. Hume's objection of inconsistency would only be relevant, if the College had pretended to use these words in any other sense than as mere copulatives. His objection to sulphas potassæ cum sulphure seems valid, but I much doubt that it is a sulphite of potass, for I have never been able to disengage sulphureous acid from it by means of sulphuric acid. The process and the substance itself have been retained, I have no doubt, in compliance with experience and prejudice. To Mr. Hume's questions respecting the oxidum antimonii cum phosphate calcis, the following answer may be given. We have no better or more explicit title. Pulvis algarothi mixed with phosphat of lime will not produce the pulvis antimonialis of the London College, because, although Mr. Hume apprehends it to be the most *uniform* oxyd of antimony, it is a sub-muriat and not an oxyd. That the Edinburgh title expresses the real constitution of the substance in question was proved by Mr. Chenevix. Flavus is perhaps an unnecessary epithet to the sub-sulphat of mercury. But in the substitute proposed for the whole title by Mr. Hume, he has given us a bad specimen of his skill in contriving unobjectionable names. Hydrarg. flavus would mean metallic quicksilver of a yellow colour. I totally differ from Mr. Hume in thinking that sub and super are unnecessary expletives; on the contrary, I think them a most material improvement, and from a subsequent criticism have some idea that Mr. Hume does not understand their application in chemical nomenclature. With regard to the comparative strength of crude and purified opium, I again disagree from Mr. Hume, for I consider all the processes used for *purifying* opium as processes for *spoiling* it. Mr. Hume tells us, that cerussa chiefly consists of carbonas plumbi; I very much doubt it. What he means by there being too much *play* on the word oxidum, I do not know; it is evidently much used, and with great propriety. The word *impurum* is used for the sake of truth, because the articles to which it is affixed are *impure*; and impure articles are admitted, because they are sufficient for the purpose, and because apothecaries, however they might charge their patients, would not be at the expence of procuring them pure. That there are many varieties of calamine, so far from being an objection is an additional reason for the use of the epithet Impurum. It is hardly possible to free sulphat

sulphat of zinc entirely from iron; but its presence is not injurious, and the acid is added because the sulphat of zinc employed by apothecaries contains oxyd of zinc in excess. With regard to the presence of sulphuric acid in the solutio acetitis zinci, Mr. H. is probably right; but the mode of preparing it is not only the most convenient, but the best. The reason, I apprehend, for retaining the two carbonats of iron is, that apothecaries will in general procure it from the trading chemists, while directions, by which it may be prepared in a few hours, may often be useful. I apprehend that no carbonic acid remains in the ammoniaretum cupri; what proof has Mr. H. to the contrary? Mr. Hume asks, if sub be properly added to acetis cupri, why is it not to acetis plumbi? I answer, simply, because the former is a sub-acetite and the latter is not.

Such, Gentlemen, are the arguments by which I have heard similar criticisms refuted when they have been the subject of discussion among my fellow students; and if they are not always satisfactory, they will at least show that much may be said on both sides. On the new Pharmacopœia, both with regard to its nomenclature and its substance, some observations worthy of notice will be found in the Review already mentioned; in Duncan's, jun. New Dispensatory; and in Murray's Elements of Pharmacy.

A STUDENT OF PHARMACY.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

NEARLY five years have elapsed since I first ventured to call in question the propriety of attempting to exhibit medicines *internally* in hydrophobia and tetanus, and more than two since I took the liberty a second time of protesting against the continuance of this most injudicious practice; or I should rather have said, *this ingenious mode of tormenting*;* but so imperfect was my knowledge of the true nature of the diseases at that time, that my objections were founded more on the horror expressed by this unfortunate

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* See Medical and Physical Journal, vol. i. p. 447-9; vol. vi. p. 478-480.

tunate class of patients (invariably in hydrophobia and very often in tetanus) at the sight of either food or medicine, and on the *uniform failure* of this method of treatment during a period of at least *two thousand years,* (a length of time much more than sufficient to shew that the plan was altogether improper) than on any correct ideas I could pretend to have formed respecting them; and the more I reflected on the subject, the stronger was my conviction of the necessity of *an entire change in our manner of proceeding,* before any progress could be made in the methodus medendi. Upon this ground it was that I recommended the external application of opium, as well as because it seemed well calculated by its property of diminishing morbid irritability, to counteract the most dangerous and distressing symptom (the spasmodic affection of the muscles, particularly those employed in deglutition) we have to encounter in these "*most dreadful of human disorders*:" But the plan I proposed has not, to my knowledge, been tried in hydrophobia;* and only in five cases of tetanus that I have heard of †, in some of which it was evidently useful, though its effects were not so decisive as I expected; indeed, in one case only has it been fairly tried, and in that it succeeded completely.‡ But long before this happened, my opinion had been, that our want of success in the cure of these maladies was more owing to the want of a systematic arrangement of the phenomena, and the judicious application of the knowledge to which such an arrangement would lead, than to any

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* Opium was applied externally in a case of hydrophobia that occurred in this town last summer; but cantharides and opium were given internally at the same time: electricity was also employed. As usual, the case terminated fatally.

† Of five cases of tetanus in which the opiate frictions were used, *four were cured,* but in all of them other means were employed at the same time, which renders it difficult to say precisely, what share of the merit was due to the former. Can it be shewn however, that an equal degree of success has attended the treatment of the same, or any given number of cases taken in succession, *where internal remedies alone were employed?* And does it not hold out a strong inducement to relinquish the use of internal remedies in hydrophobia; at least, until a rational theory of the disease shall have been formed, capable of directing us in the choice of more appropriate remedies than those in present use?

Frictions with opium and mercury are said to have been employed with advantage in tetanus two or three years ago, by Mr. Mursinna, at Berlin.—*Med. Journ.*

‡ Med. and Phys. Journal, vol. 6, p. 433.

any other cause; and these ideas took such firm hold of my mind as to have led me to reflect, frequently and earnestly, on the ætiology and symptomatology of the diseases in question, and am inclined to hope some benefit may accrue to this department of medical science from my labours; indeed, I am greatly deceived if I have not found out a path which will, *if hydrophobia be remediable*, eventually lead to success. At any rate I have discovered (which is an acquisition of no small import, as it must certainly lead the way to a plan of proceeding totally different to those in common use, the necessity of which I imagine will be obvious) *why medicines administered internally, never did,* NOR NEVER WILL, SUCCEED *in subduing it.**

I shall not at present enter into a detail of the method I have pursued in prosecuting my inquiries, or the data on which my conclusions are founded: These, with a few remarks on the pathology of diabetes, and some farther observations on opium, may probably be published at my leisure, should the reception of the following be such as to encourage me to proceed.

The design of this paper is merely to announce to the Medical World, through the medium of your Journal, *the result of my inquiries*, (as some time may probably elapse before the whole will be ready for public inspection;) in doing which I shall purposely avoid entering into any reasoning on the subject, farther than is necessary to render what I have to say intelligible, and to enable your readers to reduce my ideas to practice, should they be inclined to think favourably of them. All I beg is, that they will not hastily condemn a scheme of practice, which appears to me, on the most mature deliberation, better calculated than any hitherto proposed, to subdue *the most terrific malady to which human nature is liable, and which has continued its ravages uncontrouled, from the earliest accounts we have of it, to the present time.*

Without farther preface, I shall proceed to state the principal conclusions at which I have arrived.

1. Hydrophobia and tetanus belong to the same natural class and order. †

2. The

* Undoubtedly, patients afflicted with *tetanus* do now and then struggle through the disease, though treated in the common way; but so seldom, as only to form an exception to a general rule.

† Dr. Cullen's classification appears to be correct, *as far as it goes*; but that of Dr. Darwin is preferable on some accounts.

2. The remote cause varies according as the disease is idiopathic or symptomatic.

3. The predisposing cause consists in *an unequal and irregular distribution of the nervous or sensorial power*; the tendency to which is increased by external heat, debility in the muscular and other coats of the stomach and intestines, and of the involuntary muscles generally, impure air, &c. &c.

4. The proximate cause consists in *an exuberance and retrograde action of the faculties of the sensorium affecting the voluntary muscles.**

5. The proximate effect is the disease itself, which consists in *a spasmodic and retrograde motion of the fibres of the voluntary muscles.*

6. *In violent tetanus every voluntary muscle in the body is affected, as described in No. 5.*

7. *In hydrophobia, the spasmodic and retrograde motions specified in No. 5, are principally confined to the pharynx, the œsophagus, the larynx, the epiglottis, the tongue, and the muscles employed in deglutition*; (the stomach, though an *involuntary* muscle, is often affected in the same manner), *hence the characteristic symptom of the disease, horror at the approach of liquids or food; hence also the inefficacy and fatal consequences of administering medicines internally, and the cruelty of urging the patient to swallow liquids, &c.*† *There are also convulsive motions of the heart and arteries, evinced*

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* There are some who refuse their assent to the doctrine of a retrograde action of the vessels altogether, though it is a fact as well established as any in Anatomy or Medicine; others there are, who admit that it may take place in the muscular coats of the stomach and intestines, but deny the possibility of its occurrence in the absorbents, on account of the valves being so numerous and strong as to support a column of mercury when injected after death; which, they say, must necessarily, and at all times, prevent a regurgitation of their contents; not considering that the valves are composed of muscular fibres and vessels as well as the absorbents, and that when the action of the absorbents is inverted, the action of the valves must be inverted also.

† To be convinced of the truth of this reasoning, we have only to turn our attention to *the relative situation* of the parts above mentioned, and to keep in mind *their natural action*, particularly that of the tongue and epiglottis, in the act of swallowing, and compare it with *the spasmodic and retrograde action* with which they are affected, and which render swallowing so difficult and dangerous in hydrophobia. We must also keep in mind the vicinity of the œsophagus and trachea, their similarity of form, the intimate connection that subsists between them in the offices they perform, and how apt parts so circumstanced are to take on the same kind of action; the sphincter vesicæ et ani, for example.

evinced by the violent palpitations which often take place: At the same time the voluntary muscles belonging to the chest and extremities are variously and violently agitated and convulsed, (the nervous power in them being abundant, and its action retrograde, but less so than in spasm; the energy of the brain seems in some cases to be also increased:) *in some instances there is merely an increased action of the voluntary muscles;* in others the latter are affected, partially or generally, with spasmodic or retrograde action as in tetanus; all these circumstances contributing to produce that wonderful and horrible variety observable in the disease.*

Of the other symptoms, it will be sufficient to observe at present, that the principal ones, such as the lassitude, *the shooting pains preceding the attack of hydrophobia, from the part bitten upwards towards the head or heart, and never in a contrary direction,* the great depression of spirits, restlessness, *extreme sensibility to all impressions, the violent and long continued efforts to vomit †, the sense of suffocation, thirst, delirium; the vehement and incessant exertions to get rid of the saliva, the variable state of the pulse and respiration, &c. &c.* will be easily and fully explained on the principles laid down in No. 3, 4, and 5; and those which are yet to be brought forward.

The poison insinuated into a wound from the bite of a rabid animal, appears to exert its influence *principally if not entirely upon the nervous system;* though the size and depth of the wound, and the violence used in inflicting it, causing the skin and muscles to be more or less lacerated, seems to have some effect both in producing the disease, and in determining the duration of the interval between the bite and the accession of the disease. A good deal may also depend on the nervous system of the patient being more or less irritable.

What is the precise state of the inoculated part in the interval between the healing of the wound and the coming on of the hydrophobia; and how the poison operates in producing those changes in it which immediately precede the disease, are points which have not been explained; but I hope to be excused if I say, I do not consider them altogether inexplicable.

8. At

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* As in the case described by Mr. John Hunter, where the patient was relieved by running round Smithfield. See Heads of Inquiry in the Transactions of a Medical Society, vol. i.

† See Hamilton on Hydrophobia, vol. i. p. 213—219.

8. At the same time that certain parts of the system are affected as described in No. 6 and 7, there is *a deficiency* of the nervous or sensorial power in the *involuntary* muscles, *which is in proportion to the exuberance in the voluntary*; hence the vital and natural functions are carried on in a weak and inefficient manner, from the sensibility, irritability, and mobility; or in one word, the *contractility* of the parts employed in carrying on these functions, (namely the heart, arteries, muscular coats of the stomach and intestines) being greatly diminished. *And this is the reason why tetanic patients bear such enormous quantities of opium and wine, without experiencing the usual effects.**

It also shews why opium *taken internally,* inasmuch as it tends to increase this *want of contractility* in the muscular fibres of the alimentary canal, both by rendering them incapable of receiving, and the nerves which supply them of transmitting, the necessary supply of nervous power, must be injurious; *by lessening action where it ought to be increased,* namely, in the stomach, intestines, heart, and arteries; *and increasing it where it ought to be diminished,* namely, in the *voluntary* muscles.†

Thus it appears, that three different states of the nervous power subsist *at the same time; namely, an exuberance, a deficiency, and a retrograde action. The voluntary muscles are the seat of the first and third, and the involuntary of the second;* but whether the deficiency in the latter be the cause or the effect of the exuberance in the former, I shall not at present undertake to determine. I suspect however, it is sometimes the *cause,* sometimes the *effect* of the exuberance, and the consequent inordinate increase of the animal functions.

Another circumstance which constitutes *a leading feature* of hydrophobia and tetanus, and which will assist in explaining the variety already noticed, is, the great propensity in the nervous power *suddenly to shift its situation,* in such a manner as to cause *an exuberance* where there was *a deficiency* just before, and vice versa. This is clearly evinced by the sudden sensation of the convulsions or spasms in the voluntary muscles, and their being immediately succeeded by *violent palpitations of the heart, vomiting,*

* An insensibility to the action of opium frequently occurs in mania, and from a similar cause.

† This remark is, in general, more applicable to tetanus than to hydrophobia.

ing, or retching; or by severe spasms about the throat; or by convulsive, spasmodic, or retrograde action in some of the other organs: but it seldom, if ever, happens, that *all* these symptoms are present *at the same time;* and for this plain reason, that whenever there is *an abundance* of the nervous power in one set of muscles, there is *a proportionable deficiency* in another set.

Suffocation is the most frequent cause of death happening so suddenly in these diseases, particularly in hydrophobia, from the spasmodic and retrograde action of the pharynx and œsophagus extending to the larynx, trachea, intercostal and other muscles of respiration, *so as to put an immediate and entire stop to inspiration.* But in many instances the patient falls back and dies instantly, on attempting to swallow either food or medicine; in which case a part of it probably enters the larynx and trachea, causing instant suffocation; owing to the tongue, and consequently the epiglottis, *being forced forwards,* when the glottis is of course left unguarded.

Another frequent cause of death, especially in tetanus, is, *the great monopoly and expenditure of the nervous power by the voluntary muscles, from the long continuance of the spasms; in consequence of which, the heart and large arteries do not receive a sufficient supply of this power to enable them to carry on their functions.*

9. The indications of cure, according to this view of the subject, will be clear and simple, viz. 1st. *to restore the balance in the distribution of the nervous or sensorial power;* and, 2dly, *the natural, that is, the* PROGRESSIVE *action of the muscular fibres.*

10. *No medicine, or combination of medicines, administered internally, can be adequate to the production of these effects.*

11. To restore the balance in the distribution of the n. p. which forms the first indication (No. 9) the superfluous or exuberant portion must be repelled *from the voluntary to the involuntary muscles,* (i. e. from the circumference to the centre) *which can only be done by some external application capable of giving a sudden shock to the system, so as to diminish the contractility of the fibres of the voluntary muscles, and also the mobility of the n. p.** *in the nerves distributed to the latter; to be repeated oftener or seldomer, according to the violence and frequency of the spasms, which will*

* See Cullen's Institutes of Medicine.

will be in proportion to the greater or less tendency to a return of the circumstances mentioned in No. 3 and 4.

12. *Cold water seems, a priori, well adapted to fulfil the ends proposed in No. 11 *.*

13. To restore the progressive action of the muscular fibres, which forms the second indication (No. 9), the water should be applied in such a manner as to pass over the body, *in a direction contrary to the morbid or retrograde motion of the fibres of the voluntary muscles; for which purpose, and also for that insisted on in No. 10, it should invariably be poured on the head and upper parts of the body,* (the patient being placed in an erect position supported by two assistants;) *but in every variety of the disease, the largest part, as well as the force used in applying it, should be principally directed to those parts of the body most affected with spasm:* for example, in hydrophobia or trismus, to the sides of the face, throat and neck; in opisthotonos joined with trismus, to the back, sides of the face and neck; and so in the other varieties. Two or three quarts, of a moderate temperature (perhaps about 40 of Fahrenheit) would be sufficient to begin with in an adult; gradually increasing the quantity to five or six gallons, and reducing the temperature, if that should be found expedient, as low as the freezing point; *care being taken to wipe the body dry with warm cloths immediately after, and to place it in bed between blankets till the warmth is restored, or the time returns for repeating the application* †.

Should this treatment occasion too great a depression of the powers of life, bladders of hot water might be kept in readiness to apply to the stomach, and bottles of hot water or warm bricks to the feet.

14. *The*

* As a preparatory step to this treatment, and also to relieve the spasms about the fauces, cold water should be sprinkled on *the face, throat, and parts adjacent,* as often as the paroxysm returns. If this should be serviceable, the aspersion might be gradually extended to the chest, belly, and extremities, the body being wiped dry with warm cloths, and removed into warm blankets directly after. In many cases this will perhaps be as much as the patient will be prevailed upon to submit to.

† In a practice so new as is here recommended, and a disorder so unmanageable as hydrophobia, unforeseen circumstances may easily occur to defeat, not only these, but the most judicious plans art can devise; which renders it utterly impossible to lay down rules applicable to every case. It is highly probable this paper will be found to contain mistakes, both in theory and practice, as well as omissions, which it will be for experience to rectify and supply.

14. * *The patient should on no account be urged to take either food or drink,* MUCH LESS MEDICINE, *as long as any difficulty in swallowing remains; nor should fluids of any kind be agitated in his hearing: on the contrary, every thing should be studiously avoided which is likely to excite any uneasiness or apprehension; for which reason he should be desired to ask, or if unable to speak, to express his wish by a sign, whenever he feels an inclination for refreshment.* At such times there would probably be no impropriety in allowing him to take his choice of such beverages as the following.

Lemonade; barley water sweetened with honey; gruel, or barley water, with wine, sugar, and spice; mulled wine, or good negus; beef tea, broth, &c: and a saline draught with lemon juice in the act of effervescence, once in two or three hours.

15. Principally to procure stools, but partly with a view to nourishment, glisters made of gruel, sugar, butter, and salt, should be injected every three or four hours, till the former effect is obtained †. Should they fail, and the patient be able to swallow with ease (which sometimes happens in tetanus) half an ounce of castor oil should be given in two or three spoonsfull of tartarized infusion of senna, or in any of the above mentioned liquids, every three or four hours, until the bowels are relaxed.

With a view to *the prevention of hydrophobia,* excision should *never* be omitted when the wounded part is so situated as to allow of it; and instead of limiting this operation to a few days after the accident, as is usually done, I should be inclined to perform it at any distance of time *under two years,* (the disease having appeared as late as nineteen months‡;) or even when the patient begins to complain, *provided the pain and discolouration be confined to the bitten part, and no dread of liquids has taken place.*

But where, either from a dislike to the knife, or the wound being so situated as not to admit of its use, this practice

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* This caution is as necessary to be attended to in tetanus, *when the spasms extend to the parts contained in the throat and fauces,* as in hydrophobia.

† Two or three drachms of tincture of opium might be added to each glister, should the motions of the stomach be retrograde: but it sometimes happens the sphincter ani is strongly contracted, and the introduction of a pipe has the effect of bringing on the spasms, in which case they must of course be omitted.

‡ Trans. Med. Soc. V. 1, p. 304.—Ham. V. 2, p. 134.

practice is not adopted, the *pure water of kali* should be carefully and diligently applied, as soon after the accident as possible.

As a prophylactic, *a shower bath,* used two or three times a week for a few months, seems far preferable to bathing either in fresh or sea water, both for preserving that *equilibrium* in the distribution of the nervous power, which is so essential to health, and also for preventing a *retrograde action* of the vessels *: to which should be added, *gentle* exercise on horseback, a light nutritious diet, with the occasional use of such laxatives as increase the peristaltic motion of the intestines.

After the commencement of the disease, the wounded part being painful, and excision not having been performed, I see no impropriety in destroying the life of the part, by applying a pledget spread thick over with the calx cum kali puro, and a poultice afterwards.

The analogy subsisting between hydrophobia, tetanus, hysteria, and diabetes, leads me to believe, that a method of treatment somewhat similar to the above, may be of use in the latter. In the early stage of the disease, before the retrograde action of the absorbents is firmly established, I should expect great benefit from the judicious use of *a shower bath,* together with a saline draught in the act of effervescence, every four or five hours, and bitters and laxatives occasionally; joined with a diet consisting principally of animal food.

I have not time to enlarge on this subject now; but it may not be amiss to throw out a few hints and cautions, should any of your readers be inclined to adopt the plan.

If the disorder be recent, and the patient's strength not much reduced, it might be proper to begin with water of the heat of the atmosphere; but if of long standing, and the patient be weak and hectical, the temperature of the water should be at least 60 of Fahrenheit the first week of using it; and should be reduced a few degrees every week; but if at any time he complains of being shivery and weaker after using the bath, the water should be made a little warmer a few times afterwards, and should never be reduced so low, if it can be avoided, as to cause these inconveniences.

Secondly, As soon as the patient is able to bear it, the

* May not the good effects of cold affusion in fever be explained upon these principles?

cold affusion should be used *instead of the shower bath,* gradually increasing the quantity of water; and if this agrees, after using it once a day for a short time, and the progress towards recovery is slow, it might perhaps be applied twice a day with advantage: *but the temperature of the water, and the frequency of its application, should always be adapted to the feelings and strength of the patient, the state of the weather, &c.* The proper time for applying it will be in a morning, as soon as the patient rises, or mid-way between breakfast and dinner; and at five or six in the afternoon, should it ever become expedient to apply it twice a day.

Thirdly, The patient should be in *an erect posture* whenever the shower bath or the cold affusion is made use of, and should stand on a board raised and made a little convex, with grooves and perforations to prevent the water accumulating about his feet.

Fourthly, He should be rubbed dry with warm cloths, and wrapped in a warm blanket immediately after using the bath or affusion.

Simple and self-evident as some of these precautions may seem, they are of more consequence than at first sight may appear; indeed, the success of the scheme will depend in a great measure on the manner in which it is executed.

For instance, the cold affusion was lately recommended by me, in a case of diabetes in an elderly man, after every thing else had been tried in vain.

The temperature was to be reduced, five degrees daily, from 60 of Fahrenheit to the freezing point.

The first application felt grateful to the patient; the second, of 55, too cold; the third, of 50, still more so: he complained of being chilly and weaker, and of having more abdominal uneasiness after than before. And well he might, for it proved on inquiry, that he was placed in a sitting posture (so that his legs and thighs would escape being wet) during the affusion; his body was not even wiped afterwards: he was allowed to put on his clothes, and then to go to bed without the sheets being removed.

These inconveniences might possibly have been avoided had the above directions been enforced; but in this case they had not been given to the person who superintended.

I am, &c.

Manchester, May 12, 1804. M. WARD.

To

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE following Case occurred to me at Lazaretto Barracks, Minorca, while Assistant Surgeon to the First Battalion of the Fortieth Regiment of Foot. As it exhibits a singular cause of profuse Epistaxis, I am induced, though at this distant period, to offer it for publication in your useful Journal.

I am, &c.

JOHN HENNEN,

Surgeon, third Division of Light Infantry.

Strabane, April 20, 1804.

WILLIAM STANNION, a private of the regiment, aged 25, was seized in the month of July, 1800, with violent pain in his forehead, in the site of the frontal sinusses; it was not constant, but when it did occur, which was generally at night, it usually lasted for three or four hours and was attended with violent hæmorrhage from the nose, which though frequently recurring, seldom lasted longer than ten minutes, and was constantly preceded by a sharp lancinating pain in the affected part. On the tenth day from the first attack, the common remedies of his comrades being insufficient to check the bleeding, he for the first time applied to me; I recognized him for an old patient, who had been under my care about two months before, while on the passage from England, in a very protracted case of typhus mitior, the most troublesome and obstinate symptom of which was pain in the same situation as that he now complained of, which continued long after every febrile symptom had dissappeared, and was attended with occasional amentia. Viewing his case as the effect of the intense heat acting on a weak habit, predisposed to congestion of blood in the head, a predisposition favoured by the pressure of his military accoutrements, I ordered him to remain as much as possible in the shade, to have his head frequently bathed in cold water, and I administered a gentle laxative, and introduced a dossil of lint dipped in solution of allum into the nostril of the right side, through which the blood flowed

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with most violence. This treatment however was found to be insufficient, the hæmorrhage increasing, and great debility coming on; I therefore had recourse (on the fourth day after being consulted) to the injection of water artificially cooled by means of a solution of neutral salts. In a few minutes after its use, he felt something moving violently in the cavity of the nose, which gave him exquisite pain, and shortly after a substance resembling a clot of blood was discharged; he immediately uttered an exclamation of joy, saying he was relieved from most intense torture, and the hæmorrhage ceased altogether in about an hour. I, in the mean time, was occupied in examining the substance discharged, which, to my astonishment, as well as that of Mr. Bolton, the surgeon of the regiment, and my friend Mr. Woods, assistant of the second battalion, proved to be a leech, enveloped in coagulated blood; it was of the common size, and its motions were lively. I washed off the gore, and applied it on the hand of one of the hospital attendants; it readily fastened, and was not removed before it had produced the effects usually looked for from animals of its class, procured in the more common course of things; it survived this last effort twenty-four hours. From the history of this case, there cannot be a doubt of the animal discharged having been the cause of the hæmorrhage, and as little can be entertained of its having been in the cavity of the nose fourteen days at least previous to its removal. I shall not attempt to prove the exact time of the animal's residence in my patient's body, I would only observe that the barracks where he lay were at least three hundred yards from the sea, and that no fresh water, lake, or stream, was nearer than ten miles; nor indeed from every research that I could make, (which from my situation I confess was limited) could I ascertain that the leech is common in Minorca, though, according to Dr. Cleghorn, it is a native of that island. The patient never had a return of the epistaxis for eighteen months that I remained in the regiment; he recovered his health rapidly, and, except once that he had a venereal affection, at Ricasola, Malta, he never was afterwards in the sick report, nor was he unusually affected by the excessive heat of the island.

CASE

Case of Fistula Lacrymalis.

Communicated by Mr. H. Crump, *of Albrighton*.

THE subject of the disease was a young woman of tolerable good health, but rather disposed to strumous affections, ætat 19; she had for three months laboured under a painful affection of the right eye, with slight inflammation, and a particular fullness of both eye-lids. The tears now and then passed over the cheek, which she could not account for, and then a distressing heat and dryness of the nostril on the right side came on, which was soon relieved when the tears took their proper channel.

I directed some leeches to be applied under the lower eye-lid, and the use of a saturnine lotion, c. tinct. opii, and a poultice at night made with crumbs of bread moistened with a strong decoction of poppies. This treatment was persisted in for a fortnight; the pain had entirely left her, as well as the inflammation and thickening of the eye-lids. The leeches were applied three times. (The *tarsus* on both lids were the parts most inflamed, especially at the inner canthus and *puncta* lacrymalia.) She now considered herself well, and I did not see her again for a month, when I was called to her to treat the same complaint. I found her under very different circumstances, the disease much aggravated; instead of an occasional flow of tears over the cheek, they were constantly oozing from the puncta and dribling down the cheek. Pain in the eye, inflammation of the lids, and thickening of them had returned, with heat and dryness of the nostril. The lacrymal sac now, was much distended, so much so that the tumour was evident at some distance; pressure soon emptied it, the tears escaping at the puncta, but in a very short time it filled again.

Topical bleeding was again used, with the same application, varying them a little; however, she reaped no benefit from the bleeding, nor any of the applications used; and, as her constitution began to suffer from the constant source of irritation being kept up, I gave her decoct. angustur. c. acid. nitros. which she benefitted much by; the pain was relieved by the occasional exhibition of opiates. I now thought the case promised fair for the success of an operation, especially as the obstruction in the canalâ nasali had recently taken place, which induced me to attempt the cure in a way I have seen Mr. Astley Cooper practice (when a pupil of his) in Guy's Hospital, and which

which I shall now attempt to describe. A common sized blunt probe being bent, giving it such a course as to take the direction of the lacrymal canal, was cautiously introduced under the inferior turbinated bone, passing it on till the head of the probe became fixed in the duct, using no force till I was sure the probe was in this situation, which is very soon known, especially by one that has ever introduced it; I then depress the point of the probe, in order to elevate the blunt end, and if the obstruction is not great it will pass forward to the extremity of the duct, and even into the sac itself, which was the case with my patient. When I found the probe had reached the sac, after remaining a minute, I withdrew it; the sac then, which was before distended, forming a large tumour, was soon closed, the contents taking the course of the duct. I continued introducing the probe once a day for a fortnight, which I am happy to say completed the cure. It may be necessary to observe, that after the five first introductions of the probe a free hæmorrhagy followed; I then, in a few days, observed it covered with pus, and at length mucus only, when I considered the canal perfect. My patient has now been well six months, and has never suffered the least inconvenience in the part since, nor did she take any medicine after the first introduction of the probe.

I would recommend Students in the dissecting-room to practice the introduction of the probe in the above way, on the dead subject; a few trials is sufficient to make any one expert at it, having previously dissected the parts, and thus become acquainted with the direction of the canal.

I shall, in a short time, trouble you with an account of a case of strangulated scrotal hernia, which I operated upon with success, after a stricture upon the intestine for six days; during which time, distressing symptoms were present.

May 11, 1804.

To Dr. BRADLEY.

SIR,

EVERY effort to extend the practice of vaccination is certainly laudable. The obligation conferred on society by those who labour to promote it, is beyond the bounds of calculation. But, Sir, the old adage, *est modus in rebus*, should

should be held in view, by all who address the public on this important subject. The pages of your excellent Journal are not confined to medical eyes only. As they have been the great vehicle of information, respecting the Jennerian discovery, they are to be found in the apartments of the mother, who wishes to screen her offspring from the horrors of the small-pox, as well as the surgeon or physician: Surely, then, she must turn with a sickened eye from the first paper inserted in your Journal, for the present month; besides, this paper contains no information which has not been given before. If you will turn to Dr. Jenner's first publication on the variolæ vaccinæ, you will there find (page 6) the following sentence: "During the progress of the disease, the lips, nostrils, eye-lids, and other parts of the body, are sometimes affected with sores; but these evidently arise from their being *rubbed or scratched with the patient's infected fingers.*" This part of the history of the cow-pox was undoubtedly mentioned, not only to point out a law in the agency of the vaccine matter on the animal œconomy, but to guard the inoculator against surprize at an occurrence similar to that which came under the observation of Mr. Coley; and I feel assured, both you and that gentleman will pardon the liberty I take in this suggestion*. I am, &c.

May 14, 1804. G. C. JENNER.

To the Editors of the Medical and Phyſical Journal.

GENTLEMEN,

IN the Remarks on the pustulous eruptions of animals, which you did me the favour to insert in the last Number of your Journal, there is a considerable error; the second paragraph, relative to the disease of turkies on the coast of Barbary, being put before the first. I therefore request, that the passage may be reprinted as follows:

" I am informed by Major Magra, who resided six years

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* The public have a reliance on receiving, through the medium of our Journal, every kind of information respecting the progress and effects of this important discovery; and Mr. Coley's case, we believe, will *co-operate* with Dr. Jenner's observations in *guarding* mothers from beholding " with a sickened eye," Mr. C's paper, because he has developed the true source of these unusual appearances. ED.

years at Tunis, in the character of His Majesty's Agent and Consul General, that the same disease prevails among turkies on the coast of Barbary. Their heads swell, and are affected with pustulous eruptions, and they become blind. The disorder is supposed to be infectious."

"Major Magra was told it was the small-pox, and that it always proves fatal. He landed twelve turkies from Sicily, and they all died. It is impossible to breed them at Tunis, although fowls are very plenty there."

New Street, Hanover Square, I am, &c.
May 19, 1804. JOHN RING.

LETTER I.

Of Quacks and Empiricism.

WHEN prejudice is become general and sanctioned by time, to eradicate it is an Herculean task; but as your Journal has been the medium of diffusing science, and of appreciating medical fact, I am encouraged to hope that neither you nor your readers will deem a few pages misapplied, in the admission of some cursory remarks on empiricism; a subject which affords an ample revenue to the state, gives a bias for medicine in the community, and ultimately tends to promote the interests of the profession, by exciting and extending this propensity, and which rather increases than diminishes the number of patients of the regular practitioner, as quack medicines are generally calculated to amuse without curing the sick.

Imagination is the most active passion of the mind, at the same time it is one of the least stable; so that the persons most addicted to quackery are, such as are under the influence of more imaginary than real disease, the nervous, hypochondriac, and hysteric. They are objects, however, of compassion, and their sensibilities demand pity. They find solace in variety, and their minds are soothed and charmed by novelty; the benevolent will therefore be disposed to excuse and indulge them in a propensity so conducive to mental comfort. The greatest relief, indeed, is experienced by the medical professor, who is tired with importunity to remove imaginary evils, or to subscribe to unnecessary and unavailing recipes.

There is, in the human mind, a love for novelty and a predilection for the marvellous. It is predominant in moral and sometimes even in virtuous pursuits, hence the enthusiasm

enthusiasm in religious, and the ardour in politics; the first to the excess of mania and suicide, and the latter to deliberate murder by duelling. It is not surprizing therefore that the love of the marvellous should extend to objects that respect health, when so many flattering promises (however fallacious) are held up to the desponding invalid, whose weakness leads him to credulity, and his distempered imagination to hope and confidence.

A circumstance highly conducive to quackery is, the overflowing wealth of this country. Persons of fortune sufficient to enable them to live without industry, (which is itself a disease, or the parent of disease) frequently fall into a state of ennui, which would become insupportable, were it not that in moral, as well as in physical evils, a disease when it shall have arisen to a certain extent, fortunately tends to cure itself; hence the privileged orders, those exempted from labour by their affluence, attempt to ward off the consequent evils, by cards, plays, parties, clubs, public breakfasts, public dinners, and nocturnal amusements; others, of a more hypochondriac temperament, enjoy the luxury of novels and patent medicines, and after satiety has been gratified by variety, occasionally repose upon regular practitioners, till the doctor, wearied out by importunity, and the patient by imaginary or real maladies, reverts to new nostrums, or by visiting fashionable watering places, dissipates care, and diverts ennui, at least for a season.

It is not my intention at present to convey the reader to times of yore; but I have lived to have known a distinguished group of quacks, whose names and remedies are now scarcely remembered; or if the latter are recollected, it is to mark the loss of their celebrity. Ward, about the middle of the last century, still lives in recollection, by the formulæ of medicines, bequeathed to a charitable purpose; whilst he was a prominent character, lived a Dr. Ryan, an obscure physician, of merit and abilities; but without professional character himself, he was the means of raising that of Ward, by giving or rather selling to him his nostrums, and by which Ryan must have raised a considerable sum, as he assured me he received two hundred pounds for his white drop alone. Soon afterwards Le Fevre from Liege appeared as a blazing star, and in a few months realized in this credulous country about ten thousand pounds, by pretending to cure the gout, a delusion he carried on by giving small doses of white vitriol. Although he was ignorant of medicine, he possessed the common

common sense to know that the gout makes its attack principally in the spring and autumn, on which account he commenced his operation in the spring period, when the violence of the attack would be naturally receding, and he had the prudence to quit England (carrying home his fortune) before the autumnal return of the disease.

Some empirics have succeeded by the fascination of a title to a nostrum, thus the Ephractic Pill of the Dispensary, afforded a fortune to Dr. H. by vending it under the name of the Female Pill, whence of course it must be inferred to be applicable to the case of every female. Daffy's elixir, was the old elixir salutis, now tincture of senna. Godbold's syrup is honey and vinegar, the composition of which was known before Godbold was born, as the simple oxymel of the shops.

In Surgery, quackery has been extended with equal profit to the empiric, although perhaps with more injury to the patient. A few years ago, Capt. *** came from America, with the patronage of numerous recommendation of being able radically to cure cancer; and although he never cured one, he is said to have pocketed ten thousand guineas of devoted English dupes.

This afforded encouragement to a more recent adventurer, a pupil of Dr. Rush, and really recommended by him; and whose reputation was so high in cancer empiricism, as to induce a lady here to offer him one thousand pounds to cross the Atlantic as a douceur. Weak minds are apt to estimate the value of an object by the difficulty of acquiring it; and the eclat of a single patient, although no advantage could be gained, except by the American adventurer, suddenly raised his reputation, and acquired him a fortune, which the sagacity of his countrymen never would have conferred.

After this general coup d'œil of the empirical field, I shall descend to particular characters, and introduce my second letter with some account of the celebrated Dr. Day, should you approve the first address of your constant reader.

IETROS.

London, May 20, 1804.

Account

Account of Diseases in an Eastern District of London, from April 20, to May 20, 1804.

ACUTE DISEASES.	
Peripneumonia	2
Catarrhus	5
Measles	3
Rheumatismus Acutus	4
CHRONIC DISEASES.	
Tussis	13
Tussis cum Dyspnœa	17
Hydrops Pectoris	4
Pleurodyne	5
Anasarca	5
Ascites	4
Ophthalmia	3
Fluor Albus	14
Menorrhagia	12
Chlorosis	5
Amenorrhœa	7
Dyspepsia	5
Vomitus	2
Procidentia Vaginæ	1
Herpes	4
Rheumatismus Chronicus	13
PUERPERAL DISEASES.	
Peritonitis	3
Menorrhagia Lochialis	5
Rhagus Papillæ	4
Mastodynia	6
INFANTILE DISEASES.	
Aphthæ	3
Convulsio	2
Herpes	2
Vermes	4

The present state of disease does not offer any thing new or very interesting to the medical inquirer. Catarrhs and other affections of the chest still continue. These, which generally constitute a large proportion of the disorders occurring in the winter, or in the earlier months of the spring, have been continued later than usual in the present season. This has proved a discouraging circumstance to some who are subject to an annual return of these complaints, but who generally observe them to retire at an earlier period of the year, and are therefore ready to infer, that instead of being periodical, their complaints will become continual. Their continuance, however, may be ascribed to the very frequent and sudden changes of temperature during the period referred to. The degree of heat prevailing in the early months of the spring, induced some persons to expose themselves to the danger of catching cold, either by a change in their clothing, or by placing themselves in a current of air, which, however pleasant and refreshing, has been the occasion of producing a relapse, or protracting their disease.

CRITICAL ANALYSIS

OF THE

RECENT PUBLICATIONS

ON THE

DIFFERENT BRANCHES OF PHYSIC, SURGERY, AND MEDICAL PHILOSOPHY.

An improved Method of treating Strictures in the Urethra; by THOMAS WHATELY, *Member of the Royal College of Surgeons, in London.* 8vo. pp. 230. London, 1804.

(Continued from our last, pp. 475—478.)

"When the bougie has reached the anterior part of the stricture, it should rest there for a few seconds, that the caustic may begin to dissolve. It should then be pushed very gently forward, about one-eighth of an inch; after which there should be another pause for a second or two. The bougie should then be carried forward in the same gentle manner, till it has got through the stricture. The sense of feeling will generally inform the operator, when it has proceeded so far. But here we are to have recourse likewise to the notch in the bougie, as a guide; which, when the point of the instrument has fairly passed through the stricture, will generally be seen near the orifice of the urethra.

"In the greater number of cases, in which the caustic is thus applied, even in the first instance, it gives but little pain at the time of its application. A slight scalding in making water, and a trifling discharge during the first day or two, are, however, commonly produced by it. But it must be observed, that the mildness of these effects is entirely owing to the small quantity of caustic employed.

"At the expiration of seven days, the application of the caustic should be repeated in the same manner. If the first application should have enlarged the aperture of the stricture, which may be known by passing a bougie through it, of the same size as that by which the caustic was conveyed, the bougie used in the second operation should be a size larger than the one used in the first, taking care, however, that this be not too large to pass through the stricture. But if the passage shall not have been enlarged by the first process, the second must be carried on by the same sized bougie as was before used. If the patient felt no pain under the first operation, a piece of kali, a small degree larger than was used before, may be selected for the succeeding attempt. But if the first application gave pain, there should be no increase made in the quantity of caustic. At the end of seven days more the caustic should be repeated a third time. At this and all future applications

of

of it, the bougie, upon which it is applied, should be increased in size, in proportion as the aperture of the stricture dilates, the better to effect the dilatation. Every succeeding bougie should pass with some degree of tightness through the stricture, and be moved backwards and forwards several times, either slowly or more quickly, as the patient best can bear, till the caustic is dissolved. The operation should be repeated in this manner till the contracted part of the urethra is dilated, if possible, to the natural size, which is generally practicable in recent strictures, In those of longer standing, we should make the attempt, and carry the dilatation as far as it can be done with safety. We are, however, on no account to increase the quantity of caustic, as we increase the size of the bougie.

" On account of the extreme activity of this remedy, and the certainty with which it destroys the organization of the part it touches, it is necessary to fix upon a maximum or determinate quantity, which we should not venture in any case to exceed. Without this precaution, great mischief may result from its application; as some patients have so little irritability, as to be able to bear much larger quantities of it, without any sensible inconvenience, than it would be prudent to use. On this account, as well as from a wish that the remedy should act only on the surface of the stricture, without destroying its substance, I do not in any case apply more of the kali purum at a time than a piece about the size of a common pin's head; and even this quantity cannot be borne where the habit is very irritable. It would be difficult to weigh such small portions of the article. In order, therefore, to convey a clear idea of the different quantities to be used, I shall here represent them by three dots of different sizes, thus, • . . and to give further assistance on this important point, I find that twelve bits of the largest size weigh one grain."

The succeeding chapter contains Mr. W's method of applying *lunar caustic* to strictures, as recommended in his former work; for he by no means wishes this remedy to be superseded by the new one, as different cases require different treatment.

" There are, (says Mr. W.) as has been before stated, some cases in which the contraction is so irregular, and its aperture so untowardly situate, that a bougie cannot readily, if at all, be passed into it; other cases have likewise been described, in which it is impossible to pass a bougie through the strictures. If, in the former of these cases, a bougie, furnished with the kali, cannot be passed *into* the stricture, or if it get through the stricture, and yet do not destroy the irregularity, and it becomes necessary for this purpose to apply a caustic at the extremity of a bougie to the anterior part of the contraction, I should certainly prefer the lunar caustic to the kali purum. In cases of the latter description, the lunar caustic, for the reasons already assigned, ought always to be fairly tried in the same way, previous to the use of the kali purum.

" The lunar caustic should be used in every case, in a determinate

nate quantity, upon the extremity, and partly upon the shoulders of a common bougie, which has previously had the curvature of the urethra given to it. The following is an improved method of arming a bougie with this caustic. Take a given quantity of powdered lunar caustic, e. g. the twelfth part of a grain, put it upon a bit of flat glass, then take a very small quantity of thick mucilage of gum arabic upon the point of a pen knife, (about the quantity of a large pin's head to a quarter of a grain of caustic is sufficient) mix the caustic and mucilage together. If the quantity of mucilage be nicely adapted to that of the caustic, it will almost immediately form a paste, which may be taken up from the glass on the point of a knife. In about half a minute this will become so stiff, that it may be rolled into a pill, without adhering to the fingers. In this state it should be put immediately upon the end and shoulders of the bougie, and without delay so moulded upon it, as to become perfectly smooth, like the extremity of the bougie. The operator's finger and thumb will mould the paste, and his thumb nail will smooth its surface, or it may be polished by gently rubbing it on the glass. But this must be done expeditiously, otherwise the paste will become so hard as to be incapable of being thus moulded."

"The bougie may likewise be prepared in the following manner: The liquid paste of caustic and mucilage, when first mixed, may be immediately put upon the extremity of the bougie from the point of the knife, and, as it hardens, may be coated upon it, partly by one of the fore fingers, and partly by the knife. This paste hardens so quickly, that by the following day it will be too firmly fixed on the bougie to be easily separated from it.

"When a bougie, thus armed, is applied to either of the kinds of stricture I have just mentioned, it should be of as large a size as the urethra will admit. When it arrives at the strictured part, it should be pressed against it with a moderate degree of force, till the caustic is dissolved, which it will be in a minute or two.

"The quantity of caustic employed in the first operation, should not in any case exceed the sixteenth part of a grain. At the second and third operation, the twelfth part of a grain may be used, if the quantity first employed gave but little pain. If, after this, no progress is made in opening the stricture, the quantity of caustic may be gradually increased to the eighth, the sixth, or if the patient bear the preceding quantity very well, even to the fourth of a grain at each application. But the increase should be made with a very cautious hand, and in no case ought we to exceed the quantity last mentioned. In those who are young and healthy, it may sometimes in these cases be repeated to advantage every five days; in other cases, however, a week, or even less frequently, will be sufficient. In making an addition to the quantity before used, we should attentively regard the effect produced by preceding applications; should these have produced pain and irritation, with a frequent desire to make water; or hæmorrhage, even of the slightest kind; we must not even repeat the caustic, much less

less increase its quantity, till these effects have entirely ceased. As a proof of the necessity of keeping an attentive eye on the effect of former applications, I may inform the reader, that I have seen an instance, where only the twenty-fourth part of a grain of this caustic produced great irritation."

The remaining part of the volume contains observations on the danger, suffering, and consequent inconvenience of Mr. Home's method of applying caustic to strictures; to which succeed a competent number of cases to illustrate the use of both remedies.

There is also an APPENDIX, on a peculiar affection of the bladder in elderly people.

In our opinion, all sufferers from strictures in the urethra, as well as surgeons in general, are much indebted to Mr. Whately for the important improvements he has made in this branch of the profession.

Three Letters on Medical Subjects: addressed to the Rev. Gilbert Ford, Ormskirk, Lancashire. By JOHN FORD M. D. *Chester.* London, pp. 55. 1803.

THE first and principal part of this little publication is no more a subject for medical criticism than the advertisements of the fashionable empirics of the day. It will only excite some surprize, that a regular physician should depart from the line of professional respectability, in thus advertising a secret medicine prepared under his own inspection, and taking pains to satisfy the world that the secret will remain in the family, unimpaired, after the death of the inventor.

The next subject is, remarks on the use of granulated tin as a vermifuge, and as a medicine of general activity in relieving the intestines from indurated fæces long retained. Besides this well-known power of tin filings, the author attributes to it, when used in large doses, a peculiar sedative operation in checking hæmoptysis, and in quieting various powerful nervous impressions on the mind, without being attended with the same inconveniencies that follow the use of opiates. With this view Dr. F. particularly advises the tin to be employed in the latter stages of pregnancy, when the mind is often peculiarly anxious and irritable, and when at the same time, a state of costiveness ought to be carefully avoided. A sedative power has, we believe, never been before attributed to this remedy; if well founded, possibly it may be owing to the lead with which the tin in common use is generally alloyed in a small proportion, and which may have a sensible operation in the large doses employed by the author.

In an appendix is added the following process for preparing the *hydrargyrus cum magnesia* or *mercurius alkalizatus.*

" Take of purified quicksilver, the finest and cleanest manna, of each one ounce. Rub them well together in a stone mortar, until the mercurial globules entirely disappear, which will be in a few

minutes, adding a few drops of water if necessary, and afterwards as much more as will reduce the mixture to the consistence of a thick syrup or treacle. With this, incorporate, by trituration, one drachm of magnesia, and add a pint of tepid water.—After the mercury has subsided, pour off the clear liquor, and add another pint of tepid water as before; and decant it off after the subsidence of the powder: To this powder add three drachms of magnesia, and as much water as will reduce it to the consistence of an electuary.—After a little trituration, put the mass upon filtering paper, and dry it with a gentle heat, breaking it now and then to expedite the drying. When it is *thoroughly* dried, add two drachms of gum arabic in powder, and mix them well in a stone mortar."

This method of using manna for the extinction of the mercury, and afterwards washing it out, leaving the metal combined with the earth, appears to us a real improvement, and worthy of attention.

Elements of Materia Medica and Pharmacy. By J. MURRAY, *Lecturer on Chemistry, and on Materia Medica and Pharmacy.* 2 vol. 8vo. pp. 746. Edinburgh, 1804.

THIS work is divided into three parts: the first treats of pharmaceutic chemistry, or of those parts of general chemistry that relate to pharmacy; the second contains a classification of all the subjects of the materia medica, with a summary view of these properties and the chief modes of combination in which they are employed; the third part is the pharmacopœia, or rules for the preparation of the different medicines, chiefly from the last edition given by the Edinburgh College, collated with the London Pharmacopœia, together with remarks on the rationale of each prescription where any thing occurs worthy of notice.

We shall give a short view of each section.

The part devoted to pharmaceutical chemistry begins with a slight sketch of the chemical elements, some of which can only be introduced for the sake of uniformity, as they have no connection with pharmacy. The author, with propriety, enlarges on the analysis of vegetable matter as more peculiarly relating to the preparation of medicines. He very justly enforces the important distinction between the proximate and the elementary principles of vegetables, and shews that the business of the pharmaceutical chemist altogether relates to the former, not the latter.

The proximate principles being described, the methods of separating and preparing them for use, and the re-agents necessary for this purpose, are thus enumerated.

"From this enumeration of the proximate principles of vegetables, we may perceive the reasons for those pharmaceutic processes to which plants are usually subjected.

"By infusion in water, we impregnate the fluid with the gum, sugar, extract, tannin, saline substances, part of the essential oil, and part also of the resinous principle. The aroma of the plant is

 generally

generally first taken up: by longer infusion the water is loaded with the colouring astringent and gummy parts: these are also most abundantly dissolved when the temperature is high. Hence an infusion differs according as the water has stood, longer or shorter, on the materials, and according as it has been promoted or not by heat. An infusion made in the cold is in general more grateful, while one made with heat, or by keeping the fluid long upon the materials, is more strongly impregnated with active matter.

"By decoction or boiling, the solvent power of the water is still farther increased; and hence the liquor always appears darker coloured, and is, in fact, more loaded with the principles of the vegetable which it can hold dissolved. The volatile parts, however, particularly the essential oil, are entirely dissipated; and therefore it is an improper process for those vegetables whose virtues depend, wholly or partially, on these parts. Even the fixed principles of vegetables, at least some of them, are injured by long decoction. The extractive matter, for instance, gradually absorbs oxygen from the atmosphere, and is converted into a substance nearly insipid and inert. Opium, Peruvian bark, and many other vegetables, are injured in this manner by decoction, especially if the atmospheric air is freely admitted; and these two circumstances, the dissipation of the volatile matter, and the oxygenation of the extractive, considerably limit the application of this process. It is still used, however, with advantage, to extract the mucilaginous parts of vegetables, their bitterness, and several other of their peculiar qualities.

"Alkohol may be applied to vegetables to extract those principles which are not soluble in water. It dissolves entirely their essential oil, camphor, and resin; and as these are often the parts on which the virtues of vegetables depend, these solutions, or tinctures, as they are termed, are often active preparations.

"Equal parts of alkohol and water, in general, extract still more completely the active matter of plants, as we thus obtain a solution of all those substances which are separately soluble in either of these fluids.

"When by the action of one or both of these fluids, we obtain a solution of the active principles of a vegetable, the solution may be evaporated to the consistence of a thick tenacious mass. This forms what is termed an extract: it is termed an aqueous extract when obtained from the aqueous infusion or decoction of a plant, and spirituous when alkohol has been the solvent. The design of this preparation is to obtain the active matter of the vegetable in a small bulk, and in such a state that it may be preserved a long time without suffering any alteration. It is evident, that it is a process which can be properly applied to such plants only as have their virtues dependant on some of their fixed principles, and even these are often injured by the heat employed, and the free access of the atmospheric air.

"Distillation is another process applied to vegetable substances,

by which we obtain some of their active principles, particularly their essential oil. If the vegetable matter be heated along with the water, the oil is volatilized, alongst with the aqueous vapour: it separates from the water on being allowed to remain at rest; a part of it, however, is also dissolved, and communicates to the water a considerable degree of flavour, and often also of pungency. This forms what are termed distilled waters. If alkohol be used instead of water, the essential oil is completely dissolved in it, and we thus obtain what are termed distilled spirits."

The oxygenation of the solutions of those substances which liquid menstrua are able to extract from vegetables, has been supposed by several chemists to impair their medicinal virtues. Mr. M. is of the same opinion, and he gives the example of the decoction of cinchona in illustration.

"From an accurate analysis of it, (the cinchona) it has been proved that seven parts out of eight of it consist of woody fibre, or of a matter inert and insoluble, which cannot act on the system, and which affects the stomach only by its weight and insolubility. The remaining eighth part is that in which the activity of the medicine resides: it is therefore evident that if this be extracted, without injuring its activity, the medicine could be exhibited with much more advantage. This is in part accomplished by the preparations of it that have been mentioned; but even these do not convey it in all its force. If one ounce of the bark be infused or boiled in a certain quantity of water, the infusion or decoction is not nearly equal in efficacy to the whole quantity of bark operated on. It is therefore evident that during either of these operations, the active matter of the bark has not been entirely extracted, or has suffered some change. And here chemistry lends her assistance, and still farther elucidates the peculiar nature of this substance, and the changes produced in it by these processes. It has been proved by experiments, that the matter on which the power of the bark depends, has a strong attraction for oxygen at a temperature moderately increased; that during the infusion, and particularly during the decoction of that drug, this active matter absorbs oxygen from the atmosphere, and is converted into a substance insipid, and inert. This leads to the improvement of the preparations of this medicine; and experiments instituted for the purpose have accordingly proved, that, while by long boiling the virtues of the bark are nearly totally destroyed, they are fully extracted by a few minutes decoction in covered vessels. The same investigations have pointed out the nature of the action of some other substances on bark, formerly not well understood. Thus, it has been found by experience, that the alkalies, and more particularly magnesia, enable water to extract the virtues of bark, more completely by infusion—a circumstance elucidated by the fact since discovered, that the extractive matter of the bark, to which its activity is owing, combines with facility with these substances, and forms soluble compounds."

The

The author's classification of medicines is in some degree different from his predecessors, principally indeed by following the simplifying system of Brown with very scrupulous accuracy. The author's table of classification is the following.

"A. GENERAL STIMULANTS.		
	a. Diffusible.	Narcotics.
		Antispasmodics.
	b. Permanent.	Tonics.
		Astringents.
B. LOCAL STIMULANTS.		Emetics.
		Cathartics.
		Emmenagogues.
		Diuretics.
		Diaphoretics.
		Expectorants.
		Sialagogues.
		Errhines.
		Epispastics.
C. CHEMICAL REMEDIES.		Refrigerants.
		Antiacids.
		Lithontriptics.
		Escharotics.
D. MECHANICAL REMEDIES.		Anthelmintics.
		Demulcents.
		Diluents.
		Emollients."

All that has been said or can be said on the subject of stimulant and sedative, in the present state of human knowledge, has long been exhausted; we shall therefore abstain from entering into this controversy, but we must make a single remark on the mode in which the author introduces this arrangement to his readers. He observes, that "the systems of classification of the articles of the materia medica, which are founded on their sensible qualities, their chemical compositions and properties, or their characters as objects of natural history, are extremely defective. They associate substances, which, as medicines, have little resemblance, and separate others which are intimately connected.

"As the study of the materia medica is merely the study of the medicinal properties of certain substances, it is evident that the method of arranging them, as they agree in producing effects on the living system, is the one best calculated to fulfil all its objects.

"The foundation of the classes being similarity of operation, those substances are arranged together which have the closest resemblance in medicinal power, and although, when the extremes of the classes are considered, substances may sometimes be found associated which appear to be little connected, yet this can never be so much so as in the other systems of classification, and the connection

nection, though apparently remote, may always by slight gradations be traced."

Classification is so good a thing in itself that an indifferent one is perhaps better than none at all, for experience will sooner or later correct the errors of defective system; but if similarity of operation is to be the basis of a classification of materia medica, we know not where in any of the other systems will be found a more palpable violation of this principle than in the present, which includes, under the same head, alcohol, tobacco, and digitalis.

The description of each individual article of materia medica is brief, accurate, and as comprehensive as is compatible with the limits the author has allowed himself. The following will serve as a specimen:

" Angustura is a bark imported within these few years from the Spanish West Indies, the botanical characters of the tree producing it being unknown. It is in flat pieces, externally grey and wrinkled; internally, of a yellowish brown, and smooth; has little flavour; taste, bitter and slightly aromatic. Water, assisted by heat, takes up the greater part of its active matter, which does not seem to be injured even by decoction. Alkohol dissolves its bitter and aromatic parts, but precipitates the extractive matter dissolved by water. Proof spirit is its most proper menstruum. By distillation, it affords a small quantity of essential oil. The powdered bark, triturated with lime or pot-ash, and water, gives a smell of ammonia.

" Angustura is a powerful antiseptic. It was originally introduced in the West Indies as a remedy in fevers, equal or even superior to the Peruvian bark. In this country it has been principally used in obstinate diarrhœa, and in chronic dysentery, and with advantage. Its dose is from ten to twenty grains of the powder, or one drachm in infusion or decoction. Its tincture with proof spirit in a dose of one or two drachms has been used in dyspepsia."

Among the remedies supposed to act merely chemically, and whose operation is not essentially connected with the state of the living fibre, the author includes the class of refrigerants. Their modus operandi has long been a matter of dispute; the following chemical explanation of it is here given.

" Keeping in view the very inconsiderable action of these remedies, it may perhaps be possible, from the consideration of the mode in which animal temperature is generated, to point out how their trivial refrigerant effects may be produced.

" It has been sufficiently established, that the consumption of oxygen in the lungs is materially influenced by the nature of the ingesta received into the stomach; that it is increased by animal food and spirituous liquors, and in general by whatever substances contain a comparatively small quantity of oxygen in their composition. But the superior temperature of animals is derived from the consumption of oxygen-gas by respiration. An increase of that consumption must necessarily, therefore, occasion a greater evolution

tion of caloric in the system, and of course an increase of temperature, while a diminution in the consumption of oxygen must have an opposite effect. If, therefore, when the temperature of the body is morbidly increased, substances be introduced into the stomach, containing a large proportion of oxygen, especially in a state of loose combination, and capable of being assimilated by the digestive powers, the nutritious matter received into the blood must contain a larger proportion of oxygen than usual; less of that principle will be consumed in the lungs, by which means less caloric being evolved, the temperature of the body must be reduced; and this operating as a reduction of stimulus, will diminish the number and force of the contractions of the heart.

"It might be supposed that any effect of this kind must be trivial, and it actually is so. It is, as Cullen has remarked, not very evident to our senses, nor easily subjected to experiment, and is found only in consequence of frequent repetitions."

The contents of the third part of this work have been mentioned to be a translation of the new Edinburgh Pharmacopœia, with an addition of those preparations of the London College that are peculiar, or differ essentially from the former. To some of the metallic and saline preparations, suitable remarks are added on the rationale of the operation. Under the *pulvis antimonialis*, Mr. Chenevix's new method is given; but the author adds, (what we believe to be perfectly well founded) that neither this nor the antimonial powder of the College is precisely the same as the celebrated empiric preparation which they profess to imitate.

The dangerous nomenclature now adopted by the Edinburgh College for calomel and corrosive sublimate, is here noticed.—Mr. M. prefers the old distinctions of *corrosivus & mitis*.

The first appendix to these volumes contains a very short view of the medical history of the gasses, of electricity, and Galvanism.

In the second appendix a few remarks are given on the method of composing medical prescriptions, with a table of doses.

"The following are the principal circumstances to be attended to in forming a prescription.

"1*st*, Simplicity should be attained, as far as is consistent with the objects of the prescription. Nothing ought to enter into the composition which does not add to its virtue, render it less ungrateful, give it a convenient form, or which is not necessary to conceal any particular ingredient; and, in general, the practice of accumulating a number of articles in one prescription is to be avoided.

"2*dly*, Substances, it is evident, ought not to be mixed together, which are capable of entering into chemical combination, or of decomposing each other, unless it be with a view of obtaining the product of the combination, or decomposition, as a remedy.

"3*dly*, Those mixtures are also to be avoided, in which one medicine, by its peculiar action on the stomach or general system,

 modifies

modifies and changes the action usually exerted by another, unles where the object is to obtain the effects of that modified operation.

" *4thly*, The error of contra-indication is to be guarded against, or those medicines ought not to be combined, the virtues of which are not merely different, but are, in some measure, opposed to each other.

" *5thly*, The ingredients which are to be mixed, must be such as will mix properly together, so that the form in which the remedy is designed to be exhibited, may be easily obtained and preserved.

" *Lastly*, The form under which a medicine is prescribed, must be adapted to certain circumstances; principally to the nature of the disease, the nature of the remedy itself, and, as far as may be possible, to the taste of the patient.

An experienced apothecary might fill up these outlines to great advantage: as they now stand, they scarcely deserve a place.

Tables and an Index conclude the work.

An Essay, Medical, Philosophical, and Chemical, on Drunkenness and its Effects on the human Body; by THOMAS TROTTER, M.D. &c. &c. 8vo. pp. 203. London, 1804.

THIS Essay is a translation, much enlarged, of Dr. T's Thesis, which he defended for his degree at Edinburgh, in 1788. It continued very popular among the students for several years, on account of the novelty of the subject, its own merit, and particularly the concise and pointed encomium of Dr. Cullen, who was his public Examiner at the Graduation. It is the custom in this truly liberal University for the Professor who examines the candidate in public, to address him in a short speech on the subject of his Thesis, in order to take off the embarrassment that a young man must feel on commencing the defence of it in Latin, before a large audience, a majority of which are good judges of what they hear, and this too against an able and eloquent Professor, who speaks Latin as fluently as English. Dr. Cullen commenced his address on this occasion in the following words, which did the candidate no less honour than his degree, " Hanc de ebrietate dissertationem non ebrius scripsisti."

Dr. T. introduces his subject by a general statement of its importance, and the neglect it has experienced among medical writers.

" Mankind, ever in pursuit of pleasure, have reluctantly admitted into the catalogue of their diseases, those evils which were the immediate offspring of their luxuries. Such a reserve is indeed natural to the human mind; for of all deviations from the paths of duty, there are none that so forcibly impeach their pretensions to the character of rational beings as the inordinate use of spirituous liquors. Hence, in the writings of medicine, we find drunkenness only cursorily mentioned among the powers that injure health, while the mode of action is entirely neglected and left unexplained.

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This is the more to be wondered at, as the state of ebriety itself exhibits some of the most curious and interesting phænomena that are to be met with in the history of animated nature. The potent stimulus of vinous spirit, as if by magical influence, so disturbs or operates on the animal functions, that new affections of mind, latent or unknown before, are produced; and the drunkard appears to act the part of a man of deranged intellect, and altogether foreign to the usual tenor of his sober reflections.

"But a long train of the most dangerous diseases are the certain consequence of habitual intoxication: the body and mind equally suffer. Sudden death, apoplexy, palsy, dropsy, madness, and a hideous list of mental disquietudes and nervous failings, prey upon the shattered frame of the inebriate, and prove fatal in the end. These sufficiently point out the subject as highly important in a medical view, and worthy of the nicest investigation. But as I have not any precursor in my labours, nor example in the records of physic, to direct my steps, I shall need the less apology for the manner I mean to pursue; and must claim indulgence where I appear singular in my method.

"In order to treat my subject philosophically, and for the sake of method, I propose dividing it into the following heads, viz.

"1st. Definition of drunkenness.

"2d. The phænomena, or symptoms of drunkenness.

"3d. In what manner vinous spirit affects the living body.

"4th. The catalogue of diseases induced by drunkenness. And,

"5th. The method of correcting the habit of drunkenness, and of treating the drunken paroxysm.

"Under these heads I shall occasionally introduce such practical remarks as may arise out of the subject, but which are too desultory for methodical arrangement.

When Dr. T. comes to treat of the way in which the health is undermined by intoxication, he is naturally led to consider the operation of *narcotics* in general upon the human body; and here he cannot avoid the question, so much agitated, respecting the *stimulant* and *sedative* powers of these substances. He defends, at considerable length, the opinion which seems to be most generally received, viz. That these poisons *may* be always so administered as to be *stimulant* in the first instance, and so as not to be *perceptibly* sedative in their *secondary* effects; they may, on the contrary, be so administered, that the stimulant effect may not be perceptible, and the sedative one truly alarming, if taken in immoderate doses. That in moderate doses they are all stimulant.

Among the most remarkable effects of ebriety is the power it gives of resisting *cold* and *contagion*.

"The drunkard is found, in the first stage of the paroxysm, to resist the operation of cold. No stronger proofs of this need be adduced than what are daily observed among our seamen in the naval sea-ports. These men are permitted to come on shore to recreate themselves; but, from a thoughtlessness of disposition, and the

the cunning address of their landlords, they drink till the last shilling is spent; they are then thrust out of the door, and left to pass the night on the pavement. It is surprising how they should escape death on such occasions; for I have known many of them who have slept on the street the greatest part of the night in the severest weather. Nothing but that hardiness of constitution peculiar to the British seamen, which braves every danger, could survive such extremes of cold.

"The following fact is a strong instance of the inebriate resisting cold. A miller, very much intoxicated, returning from market late at night, while it snowed and froze hard, missed his way, and fell down a steep bank into the mill-dam. By the fright and sudden immersion, he became so far sensible as to recollect where he was. He then thought the surest way home would be to follow the stream, which would take him within pistol-shot of his own door. Instead, however, of taking that course he waded against the current, without knowing it, till his passage was opposed by a wooden bridge. This bridge he knew; and though he felt some disappointment, he still thought his best way was to follow the stream, for the banks were steep and difficult to climb. He now found himself in a comfortable glow; turned about, and arrived at his own house at midnight, perfectly sober, after having been nearly two hours in the water, and often up to the breech. He went immediately to bed, and rose in perfect health.—As the senses were recovered at the time he got home, it is probable he could not have resisted the cold much longer. This instance tends to confirm a common observation, that sudden immersion in cold water puts a speedy end to intoxication."

[To be continued.]

MEDICAL AND PHYSICAL INTELLIGENCE.

To the EDITORS of the MEDICAL and PHYSICAL JOURNAL.

Gentlemen,

YOU have fallen into a very great error in your critique of my "Researches into the Properties of Spring Water," and I am confident you must wish that the correction of it should be as widely diffused, through the medium of your Journal, as the error itself. You suppose that I attribute the inefficacy of the sulphureous test to detect lead dissolved in common water to the very *small* quantity which it can take up. Thus you say, "The author concludes with giving the chemical experiments which have enabled him, as

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he supposes, to detect lead, in *minuter proportions*, than any hitherto known method has been able to do. Again, where the quantity is too *small* to be indicated by the test, &c." But this is entirely to misconceive my meaning, even my words, (See Researches, p. 19) and the object of my experiments. It is not the *smallness* of the quantity, but the *mode of combination* which causes the metal to escape the action of preparations of sulphur, which in the case of this particular solution are no tests at all. In two examples I have shewn, that by a little preparation, the whole body of the water became tinged by sulphurated hydrogen, though this same substance produced no discolouration previous to the preparation. (See p. 165. G). As there is not the smallest reason to think, that the solutions in these specimens were stronger than usual, it is probable, that in all cases there is lead enough to produce an evident discolouration, were it not that the mode of combination prevents the union of the metal and the sulphur. What this mode precisely is, it is not easy fully to demonstrate. A very learned friend conjectures, that the lead is dissolved galvanically. I have offered a different hypothesis, of which I shall be very little tenacious, if a better can be proposed. The weakest possible solutions of common salts of lead, as the acetite, nitrate, &c. are discoloured by sulphurated hydrogen, which is so delicate a test, that it would be ridiculous to ascribe diseases to quantities of this poison, so small as not to be detected by it, on this account only.

I am glad of this opportunity of doing justice to Dr. Withering, by correcting a mistatement of my own. I have said, (p. 32) that no instances are on record of saturnine colic having been excited by these peculiar solutions. But I find in Dr. Withering's "Account of the Foxglove, (case 52) two instances of colics, which he attributed to the water of leaden pumps; besides a third case of an ill state of health, from what had been supposed an irregular gout, ascribed by him to the same cause. Dr. Withering did not at all suspect, that the metal could be dissolved by the water: on the contrary, he expressly says, "Perhaps, in this instance, the metal was so minutely divided by abrasion, as to be mechanically suspended in the water." However, the cases are told in such a manner, as to shew that this eminent physician suspected such water to have deleterious properties; and I am very happy to find my own opinion sanctioned by so grave an authority.

Fourcroy, in the Connoissances Chimiques, (sect. vi. art. 17), has cited some experiments of M. Luzuriaga, to prove that by agitating lead with common water in contact with air, carbonate of lead is formed, which the water dissolves; and adds, that the solution may be discovered by hydrosulphurets. These conclusions are in direct opposition, not to my experiments only, but to those of Bergman, of Baker, and Heberden. But it may be useful to discover the cause of such opposite results; and still more to collect, at some future time, as large a body of evidence as possible

sible, on a subject which is obviously of the first interest to society. I shall be obliged, therefore, to any of your correspondents, who will point out where the experiments of M. Luzuriaga are to be found.

WILLIAM LAMBE.

King's Road, Bedford Row, May 7th, 1804.

ROYAL JENNERIAN SOCIETY for the EXTERMINATION of the SMALL-POX.

The Anniversary Dinner of this Society was held this day, May 17, 1804, (being the birth-day of Dr. Jenner) at the Crown and Anchor Tavern, in the Strand, at which were present about three hundred members; his Grace the DUKE of BEDFORD, President, in the Chair.

After the healths of their Majesties and of all the branches of the Royal Family, the Patrons of the Institution, which were drank with enthusiasm; that of the immortal discoverer, and of the noble promoters and friends of his discovery, were received with heartfelt ardor.

Mr. Travers, jun. recited, in a very excellent stile, an extract from a poem, written by Mr. R. Bloomfield, called *Good Tidings, or News from the Farm*, which was greatly applauded.

The report brought up by Mr. Travers, sen. and most impressively delivered by him, afforded the highest gratification to the philanthropic and benevolent supporters of the discovery, which forms a new æra in the history of medicine, and which, originating in our isle, already carries consolation to every quarter of the globe.

He gave an account of the great exertions that had been made by the Society, and the very liberal contributions of many noblemen, gentlemen, and ladies. Among other facts, he stated, that by the influence of vaccination, communicated through the medium of the different Societies, the annual deaths from the small-pox had been materially diminished. Through this Society, in co-operation with others, the vaccine system had been propagated in Asia and America. At Constantinople a house had been opened for the purpose of Vaccination; and the Turks, although so much averse to innovation, had embraced the system with the greatest eagerness. In India, the Hindoos, from their religious veneration of the cow, had most materially benefited by this mode of inoculation, and he might almost assert that millions had already been saved by vaccination. In America, the Canadian Indians came down the country many hundred miles to get the matter; and thus whole tribes escaped the effects of that malignant and fatal distemper, the small-pox.

Mr. Travers afterwards stated, that thirty-four persons were now on the establishment of the indigent blind, of whom no less than fourteen owed their blindness to the small pox; and it was to be hoped

hoped that by the introduction of vaccination, that institution would ultimately be rendered unnecessary.

The numbers inoculated by the Society in the first year of its establishment were 8338. The persons and places, extending to every quarter of the world, furnish[illegible] with matter from the central house alone (which has always b[illegible] done free o[illegible] expence as well there as at all their stations) amounted [illegible], which had been supplied with 7048 charges or pack[illegible]ts. And it is worthy of remark, that in no single instance has th[illegible] matter furnished by this institution been found to produce a spurious disease. In consequence of this success, medical practitioners in many parts of the United Empire, more especially in the neighbourhood of Portsmouth, in Yorkshire, and the west of Ireland, have lately become particularly desirous of being supplied from thence.

The resident inoculator (Dr. Walker) also made a short report, which gave great satisfaction. He stated the contents of letters he had received from several ladies of distinction and clergymen, who in their respective neighbourhoods, had successfully introd[illegible] benefits of vaccination by means of virus which he ha[illegible]. Reports were also received from the Jennerian S[illegible]ich correspond with that of the metropolis; and ot[illegible] rapidly multiplying in different parts of the empire.

COW-POCK INOCULATION.

On Monday, April 30, ult. there was a most respectable and agreeable Annual Meeting of the Governors of the Original Vaccine Pock Institution, No. 44, Broad Street, Golden Square, established January 1800. Before dinner the Earl of Cholmondeley, the President, being in the chair, the Continuation of the Report was read of the Investigation of the Laws of Agency of the Vaccine-Pock Matter, and of the Practice and Proceedings of the Institution, as written by the Physicians, Drs. Pearson, Nihell, and Nelson.

Among the resolutions were:

1. That the thanks of this meeting be given to Drs. Pearson, Nihell, and Nelson, for their able Report.

2. That this Report be printed under their direction.

3. That the thanks of this Meeting be given to the whole of the Medical Establishment for their gratuitous services.*

Till the Report be printed it may be interesting to our Readers to lay before them an extract relating to the effect of the new inoculation, in diminishing the mortality of the small-pox, concerning which such contrary statements have been published by persons either unacquainted with the facts, or from self interest.

One of the objects of this Institution has been to furnish instruc-

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* Not one of the medical officers receive any pecuniary reward; on the contrary, they are all among the most liberal subscribers, from themselves and from their friends, as appears by the printed list.

tions for the practice of Vaccination; and this has been done by shewing patients to visitors and students, and by public lectures as well as by written and printed papers. This establishment has accordingly disseminated the new inoculation through many parts of the world. By this time its instructions and matter have introduced the Vaccine Inoculation in New South Wales, as it did before in Paris, Vienna, &c.

It may be expected from the extensive practice of vaccination, (this institution alone having vaccinated and been the immediate means of vaccinating 60,000 persons) that the fatality of the small-pox must have been diminished. That diminution however does not appear, for the Bill of Mortality for London reports 1202 to have died in the year 1803, whereas 1111 died in the year 1799, 522 only in 1797, and 1040 in 1795; and although the number has been greater in the intermediate years, yet, still the number last year, viz. 1202 is not much less than the mean number for each year during any five years for half a century past.

[illegible] has happened that no diminution of mortality is yet per[illegible] easily be understood, when it is considered that the num[illegible]d for the cow-pock are chiefly those who would have b[illegible]lated for the small-pox, and that therefore the same [illegible] remained for the natural small-pox. Hence, hithert[illegible]noculation, like the small-pox inoculation, is only a be[illegible] individuals; but this benefit is very much greater than the variolous inoculation, although the variolous inoculation, by preventing the natural small-pox, was, till the vaccine inoculation, the greatest benefit in Physic.

Prejudice, indolence, ignorance, want of opportunity, still occasion inoculation of either kind to be but partially adopted in society at large. How far laws might be established, or means be found out, for every person within a certain period after birth being inoculated, cannot be discussed on this occasion, however important this question may be for the legislature.

After dinner, the President being obliged to attend the House of Peers, the following statement was delivered by Lord Petre, one of the Vice Presidents.

The grand object of this Institution on its establishment, a little more than four years ago, was, to extinguish the small-pox by substituting for it the inoculation of the cow-pock; but however great the obligations of the public were to Dr. Jenner, the promulgator of the leading practical fact in 1798; to Dr. Pearson also in 1798, and to Dr. Woodville in 1799, for their investigations to justify the new inoculation, still a professed Institution was wanting, in order to,

First, Extend by gratuitous inoculation the history of the vaccine pock, of which, comparatively, but little was still known.

Secondly, To diffuse the knowledge of the new practice.

Thirdly, To preserve a succession of patients for matter for the use of the public.

To